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COSTS OF CONSTRUCTION OF PUBLICLY-OWNED WASTEWATER TREATMENT WORKS. 1973 'NEEDS' SURVEY

Environmental Protection Agency
Washington, D. C.

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REPORT TO THE CONGRESS

COSTS OF CONSTRUCTION OF PUBLICLY-OWNED WASTEWATER TREATMENT WORKS

1973 "Needs" Survey

Prepared Pursuant to
Sections 205 and 516, Public Law 92-500

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U S Department of Commerce
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U. S. Environmental Protection Agency
Washington, D. C. 20460

59

PREFACE

This report presents the preliminary results of a Nationwide survey conducted to obtain an estimate of the cost of construction of publicly-owned treatment works needed in each State and the Nation as a whole. It is submitted in compliance with Section 516(b)(2) of the Federal Water Pollution Control Act Amendments of 1972. The survey was designed so that the results could be used by Congress to allocate among the States the funds authorized for municipal treatment works after Fiscal Year 1974, as required by Section 205(a) of the 1972 Act.

CONTENTS

PREFACE Page i

CONTENTS Page 1

TABLES Page 2

I. EXPLANATION OF THE SURVEY Page 3

1. Guidelines for Costs of Facilities Reported
2. The Concept of "Needs"
3. Conduct of the Survey

II. LIMITATIONS OF THE SURVEY Page 6

1. Level of Treatment
2. Infiltration/Inflow
3. Combined Sewer Overflows
4. Validity of Submitted Estimates
5. Flow Reduction
6. Inadequacy for Funding Decisions

III. SURVEY RESULTS AND POSSIBLE ALLOCATION FORMULAE Page 9

1. Considerations of Equity
2. Formula Based on Costs for Treatment Plants and Interceptors
3. Formula Based on All Five Categories of Facilities
4. Special Consideration for District of Columbia's Treatment Facility

APPENDIX A. INELIGIBLE COSTS REPORTED BY THE STATES Page A-1

APPENDIX B. REASONS 1973 SURVEY RESULTS ARE HIGHER THAN PREVIOUS "NEEDS" ESTIMATES Page B-1

APPENDIX C. SURVEY METHODOLOGY Page C-1

APPENDIX D. SURVEY QUESTIONNAIRE Page D-1

TABLES

1. State Percentage of National Costs Reported for Construction of Treatment Plants and Interceptors. . . . . Page 11

2. Costs Reported for Construction of Publicly-Owned Wastewater Treatment Facilities. . . . . Page 12

3. State Percentage of National Costs Reported for Construction of Publicly-Owned Treatment Facilities. . . . . Page 13

4. Per Capita Costs Reported for Construction of Publicly-Owned Treatment Facilities, Based on 1972 Population and Projected 1990 Population. . . . . Page 14

5. Total Costs Reported by States for Construction of Publicly-Owned Treatment Facilities, Classified as to Eligibility Under Survey Guidelines. . . . . Appendix A

I. EXPLANATION OF THE SURVEY

1. Guidelines for Costs of Facilities Reported. In conformance with Section 516(b)(2) of the 1972 Act, the 1973 Survey asked local authorities to report the costs for construction of municipal treatment and collection facilities which were eligible for Federal funding under the 1972 Act and the guidelines published by EPA for construction grants, and met definitions and criteria established in the survey and outlined below. Costs of facilities funded with a Federal construction grant before August 1973 were excluded.

Costs were reported for facilities in five categories, two for treatment and three for sewer systems, defined as follows:

Category I - Secondary Treatment Required by 1972 Act. This category includes costs for facilities which would provide a legally required level of "secondary" treatment. All municipal treatment facilities as a minimum are required under the 1972 Act to reduce bio-chemical oxygen demand, suspended solids and fecal coliforms by July 1, 1977 to at least the level established by EPA in its definition of "secondary" treatment. This level of treatment meets or exceeds the requirements of water quality standards for many waterways. Facilities along some waterways are required, however, to reduce these types of pollutants still further to meet water quality standards. The costs for this additional "secondary" treatment are also included in category I.

Category II - Treatment "More Stringent" Than Secondary Required by Water Quality Standards. This includes costs for facilities which would remove pollutants such as phosphorus, ammonia, nitrate and organic substances to the extent required by legally binding Federal, State or local actions. Such actions include an EPA-approved water quality plan, an administrative or court order, a license, and water quality standards which are binding on the treatment facility. These costs are in addition to those for secondary treatment reported in category I.

Category III - Rehabilitation of Sewers to Correct Infiltration and Inflow. Costs could be reported in this category for a preliminary analysis to determine if excessive infiltration and inflow exist. If such an analysis was completed by the time of the survey and showed that they did exist, the expense of a detailed evaluation of the cost of rehabilitation of the sewer system could be reported. If such an evaluation was already completed at the time of the survey, the costs of facilities recommended by the evaluation to correct the infiltration and inflow could be reported.

Category IV - New Sewers. This category consists of the costs of new collector and interceptor sewers designed to correct violations caused by raw discharges, seepage to waters from septic tanks and the like, and/or to comply with legally binding Federal, State or local actions. As provided in the 1972 Act, costs could be reported only if the community had sufficient existing or planned capacity to treat adequately the collected sewage, and only for communities existing prior to enactment of the 1972 Amendments (collectors for new communities, new subdivisions and newly developed urban areas were excluded).

Category V - Correction of Overflows from Combined Sewers. Costs could be reported, when required by legally binding Federal, State or local action, for correcting periodic bypassing of untreated wastes from combined sanitary and storm sewers. The alternative methods for correction must have been evaluated, however, and the reported costs based on the most economical and/or efficient alternative.

The costs for facilities reported in each category were subject to three overall constraints:

a. June, 1973 dollars. All costs were to be expressed in June, 1973 dollars.

b. 1990 Population. Costs were to be estimated in the survey for facilities which would be designed to serve no more than the 1990 population projected for each State by the Department of Commerce in its "series E" projection published in December, 1972.

The "series E" projection is based on the most recent estimates of future growth in the United States, and reflects the decline in the Nation's fertility rate during the last few years.

Each State was asked to determine how its projected 1990 population would be distributed among its geographical areas. EPA assisted by providing each State a county-by-county break-out of the "series E" projection from the Commerce Department. The States, however, could accept or modify the county-by-county projections as they saw fit. Only the total projected 1990 population for the State was binding. It could not be exceeded by the combined total of all population reported as living in the service areas of all the treatment authorities in a State, although non-resident population (primarily commuters) could be reported as served in addition to the projected resident population.

The 1990 projection was chosen as a common constraint on the time in the future for which costs would be estimated. No restriction was placed, however, on when facilities which would serve the 1990 projected population might be built.

c. Supporting Information. The nature, size and cost of facilities reported in the survey had to be reasonable for the population and industries to be served. Costs for treatment facilities had to be justified by data such as population to be served, wastewater pollutants and flows expected, and reference to legally required effluent standards. Costs for collection facilities had to be supported by data such as population to be served, pipe sizes and lengths, and special problems with construction and design. Costs reported for correction of problems created by combined sewers had to be justified by special analyses and evaluations which had previously been completed. This supporting information was the minimum necessary to determine if the facilities and costs reported were reasonable and met the other guidelines for the survey.

2. The Concept of "Needs". To provide a common basis for reporting costs in the survey and for screening out any inflated costs which would potentially increase the allocation unfairly of one or more States, the survey was restricted to those costs and facilities which were eligible for Federal assistance and which could be clearly defined and documented with information to justify the size, cost and nature of the facilities reported.

The consequence of the decision to limit the scope of the survey was that some types of facilities eligible for Federal assistance under the 1972 Act were entirely excluded. Primary among them were treatment works which would achieve "best practicable treatment technology" and the 1985 goal of "zero discharge," and facilities for the prevention, control and treatment of pollution from stormwaters which do not flow through combined sewers. Study of these concepts had not reached the point where clear definitions and criteria for them could be established. Since a variety of options exists for meeting each goal of the Act, cost-effective evaluations are required before rational choices can be made and reasonable cost estimates developed. The costs reported in the survey would have been far greater if all the facilities potentially eligible under the 1972 Act could have been defined and included in the survey.

3. Conduct of the Survey. An EPA task force designed the 1973 survey from December 1972 through May 1973 with the help of the EPA Regional Offices and State officials. In June the State Water Pollution Control Agencies mailed survey questionnaires supplied by EPA to municipal authorities which could be identified in Standard Metropolitan Statistical Areas, in Cities larger than 10,000 outside SMSAs, and in at least a sample of places smaller than 10,000 and outside SMSAs. The questionnaires were completed from June through August, in most cases by the local treatment authorities with the advice and assistance of State officials. Some of the questionnaires were completed by State officials with information supplied by the local authorities. The completed forms were then reviewed by the States, approved and sent

to EPA. After EPA's review, the questionnaires were coded and sent to the Census Bureau where the data were computerized and tabulated for this report.

EPA reviewed every questionnaire to determine if facilities and costs reported fell within the survey guidelines and were justified by required data. Shortcomings were frequently corrected by discussing them and reaching an agreement with State officials. In some cases EPA's and a State's estimate of costs for particular facilities could not be reconciled and EPA prepared a separate, amended questionnaire with its estimate. (A more detailed description of review procedures is in Appendix C.)

All costs reported on survey questionnaires were coded during processing to indicate whether they were prepared by EPA, or a State or local authority, and whether or not they met the guidelines of the survey. Costs coded as eligible are reported in Section III. All costs reported on questionnaires from the States (both eligible and ineligible under the guidelines) are included in Appendix A.

II. LIMITATIONS OF THE SURVEY

Costs reported for the Nation as a whole are only indicative of the large costs of providing the kinds of facilities included in the scope of the survey. They are of little use for decisions about the appropriate level and rate of Federal funding for construction of municipal facilities.

The detailed definitions and criteria for costs and facilities which could be reported in the survey were meant to provide a common basis for the estimates of costs from each State, and make possible the reconciliation of the State estimates to produce valid ratios for allocation of Federal funds among the States. Paradoxically, however, these criteria and limitations in practice permitted some States to report large costs in some categories but kept other States from doing so. Therefore an allocation formula based on costs reported for all five categories of facilities would be unfair to a large number of States.

1. Level of Treatment. Costs reported in categories I and II for treatment plants do not reflect the costs of additional treatment which will have to be provided in many river basins after all States complete the revisions to water quality standards now underway pursuant to the 1972 Act. An allocation formula based on categories I and II would favor States which adopted high standards early over those that did not, even

though they may be planning to soon. To give a few examples, California's standards limiting the amount of heavy metals which can be in the effluent discharged through deep ocean outfalls are estimated to add several hundred million dollars to the costs it reported. Oregon's requirements for a higher degree of treatment than secondary as defined by EPA increased by a substantial percentage the costs it reported for treatment.

2. Infiltration/Inflow. Relatively few cities had completed the studies required in the survey to support cost estimates for facilities in category III. Estimated costs for sewer rehabilitation will increase rapidly as municipal authorities evaluate infiltration and inflow into existing sewers and determine the costs of reducing or eliminating it (such an evaluation is now a condition for obtaining a Federal construction grant for municipal facilities). Costs reported in category III are thus only a fraction of the amount local communities will ultimately have to spend to rehabilitate sewers.

Sewer rehabilitation can be undertaken in accordance with Federal quidelines only if the evaluation determines that it costs less than construction, operation and maintenance of that portion of facilities necessary to transport and treat the extra flow of wastewater resulting from infiltration and inflow. Future increases in identified costs for category III should result in comparable savings in reported costs for categories I and II (treatment), and should increase the total costs for facilities reported in the survey.

3. Combined Sewer Overflows. Costs reported in category V for facilities to reduce pollution from combined sewer overflows also reflect only a fraction of the total expenditures which could have been justified nationally under the survey guidelines if more cities had completed the required studies. EPA estimates by rough extrapolation of the few studies available to date that costs for facilities to reduce by 50 - 85% of the major pollutant concentrations in combined sewer overflows throughout the country would cost from $40 - 80 billion. The total costs for facilities in all five categories included in the survey would therefore have been roughly double what was actually reported if all the treatment authorities with combined sewer systems had completed the studies required to report costs in category V. An allocation formula based in part on costs reported in category V would favor unfairly those States with large cities which had completed the necessary studies to report costs in this category.

4. Validity of Submitted Estimates. Another limitation of the survey is a consequence of the general understanding among the States

while the survey was being conducted that Federal construction grant funds were to be allocated according to the survey results. The States had a strong incentive, and many were inclined to report the highest costs possible and to report costs for all facilities which conceivably might be eligible under the survey guidelines, even if there was considerable doubt.

EPA coded as ineligible the most obviously inflated costs and costs for facilities which clearly fell outside the scope of the survey. States were in general given the benefit of the doubt, however, if costs reported were questionable but not clearly out of line. This policy meant that the costs reported for the country as a whole are higher than they would have been if there were incentives to keep the costs down. An allocation formula based on the survey results would be unfair to those States which tried to follow the survey guidelines, and favor those which were less attentive.

Costs for new collector sewers in category IV presented the greatest problem in this respect. Pursuant to the requirements of the 1972 Act and the survey guidelines, costs were to be reported only for communities in existence at the time of enactment of the 1972 law, and only for violations due to raw discharges or seepage to waterways or the like. Review of the survey questionnaires nevertheless revealed that many States reported costs for sewering a large proportion of their current population now using septic tanks, and for providing sewers for increased population which would inhabit new communities. A substantial proportion of these costs are undoubtedly beyond the scope of the survey, but in many cases sufficient evidence did not exist to code the costs as ineligible without running the risk of being unfair.

5. Flow Reduction. States did not have any incentive to reduce the costs reported to take account of savings obtainable from techniques for recycling or reducing flows from municipal and industrial sources. These savings would effect facilities of all types included in the survey. Planning regulations and guidelines,to be promulgated by EPA pursuant to the provisions of the 1972 Act, will require that municipal authorities consider a wide array of such techniques.

6. Inadequacy for Funding Decisions. The large cost estimates reported on the survey raise obvious questions about Federal funding for the construction grants program, but do not provide a basis for decision making on the future role of the Federal Government in financing municipal treatment facilities, or the level of Federal funding which should be provided.

Several considerations outside the scope of the survey should be addressed as well as the limitations of the survey itself when making decisions about Federal assistance for construction of municipal treatment works. Primary among them is the contribution the facilities reported in each category would make to improving water quality. Money spent on treatment and interceptors (categories I, II and part of IV in the survey) would in general bring about more reduction of pollutants per dollar than funds spent on collector systems or stormwater overflows.

Alternative methods for financing new construction should also be considered and will be addressed in the financing study to be submitted pursuant to Section 317 of the 1972 Act. As required, the study will consider a wide variety of alternative financing schemes and will recommend appropriate roles for the Federal, State and local governments.

Several constraints should also be taken into account when considering funding levels and rates. They include the inadequate pool of trained manpower available to operate new facilities, the rising costs and limited supplies of energy to run facilities, the limited capacity of the construction industry to expand operations during the short run in some areas, the inability of some communities to provide matching funds, and the impact on the National budget and economy.

III. SURVEY RESULTS AND POSSIBLE ALLOCATION FORMULAE

1. Considerations of Equity. The most important factors which ideally would be considered when determining an equitable formula for allocation of Federal funds for municipal facilities include the seriousness, nature and extent of the pollution problem, natural conditions, population, local construction costs, capacity to utilize funds wisely, and level of previous effort. The approach used in the 1973 survey takes account of all these factors except the last two: It gives little indication of capacity to use funds wisely, and in general penalizes those States with a high level of previous effort.

The major problem with the survey is that in practice it had several serious limitations (discussed in Section II) which could result in inequities if used for an allocation formula. These inequities would be considerably reduced if costs reported for sewer rehabilitation, collector sewers and reduction of pollution from combined sewer overflows (categories III, part of IV and V) were eliminated from the calculation. Some States would nevertheless be treated unfairly even if the formula is based only on costs reported for treatment plants and interceptors. Thus in practice the survey approach may be a less equitable basis for allocation than population, or a combination of considerations like population and regional variations in construction costs.

2. Formula Based on Costs for Treatment Plants and Interceptors. Total costs reported for treatment (categories I and II) and interceptor sewers (part of category IV) for the entire country were $36.6 billion. Table I shows costs for each State, and each State's percentage of the National costs for these types of facilities.

An allocation formula based on this table is considered the most equitable possible from the survey results. It would also put the money where it is likely to do the most good. As mentioned in Section II, expenditures for treatment and interceptors would in general reduce pollutants more per dollar than expenditures for other types of facilities. They should therefore usually receive the highest priority for Federal assistance, and funds would best be allocated in accordance with this priority.

3. Formula Based on Five Categories of Facilities. The costs reported in the survey totalled $60.7 billion for all types of facilities. Table 2 shows by State the total costs and costs in each category reported. Table 3 shows how an allocation formula would look if based on total costs reported, or on the costs reported in each separate category.

Table 4 shows the per capita costs reported by States in all five categories, based on 1972 population and projected 1990 population. It indicates the great differences between basing an allocation formula on the survey results and basing it on population,which is one of the factors which might be considered when determining an alternative allocation formula.

4. Special Consideration for District of Columbia's Treatment Facility. Funding for the District of Columbia's "Blue Plains" water pollution control plant should be considered in the development of an allocation formula since the City has only one major treatment plant project and the allocation formula might not provide adequate funding.

TABLE 1

STATE PERCENTAGE OF NATIONAL COSTS
REPORTED FOR CONSTRUCTION OF TREATMENT PLANTS AND INTERCEPTORS*
(CATEGORIES I, II AND IVa)

		COSTS (Millions of 1973 Dollars)	PERCENTAGE
REGION I	Connecticut	430	1.1748
	Maine	260	0.7104
	Massachusetts	761	2.0792
	New Hampshire	339	0.9262
	Rhode Island	162	0.4426
	Vermont	115	0.3142
REGION II	New Jersey	2,630	7.1856
	New York	4,165	11.3795
	Puerto Rico	394	1.0765
	Virgin Islands	32	0.0874
REGION III	Delaware	201	0.5492
	Maryland	536	1.4644
	Virginia	998	2.7267
	West Virginia	323	0.8825
	Pennsylvania	1,541	4.2103
	District of Columbia	52	0.1421
REGION IV	Alabama	310	0.8470
	Florida	1,687	4.6092
	Georgia	777	2.1229
	Kentucky	573	1.5655
	Mississippi	223	0.6093
	North Carolina	612	1.6721
	South Carolina	569	1.5546
	Tennessee	467	1.2759
REGION V	Illinois	2,296	6.2730
	Indiana	587	1.6038
	Michigan	1,552	4.2403
	Minnesota	637	1.7404
	Ohio	2,254	6.1583
	Wisconsin	481	1.3142
REGION VI	Arkansas	224	0.6120
	Louisiana	247	0.6748
	New Mexico	55	0.1503
	Texas	642	1.7540
	Oklahoma	487	1.3306
REGION VII	Iowa	421	1.1502
	Kansas	332	0.9071
	Missouri	780	2.1310
	Nebraska	183	0.5001
REGION VIII	Colorado	310	0.8470
	Montana	59	0.1612
	North Dakota	29	0.0793
	South Dakota	40	0.1093
	Utah	170	0.4645
	Wyoming	30	0.0820
REGION IX	Arizona	178	0.4863
	California	4,727	12.9149
	Hawaii	439	1.1994
	Nevada	205	0.5601
	American Samoa	7	0.0191
	Guam	20	0.0546
	Trust Territories	6	0.0164
	Wake Island	0	
REGION X	Alaska	153	0.4180
	Idaho	76	0.2076
	Oregon	281	0.7677
	Washington	536	1.4644
TOTAL:		36,601	100.0000

*Costs ineligible under the survey guidelines are excluded. Costs are affected by limitations of survey design, inconsistency in reporting, variations in planning status among States, and other variables explained in the report. Therefore, the costs should not be considered indicative of equitable shares for individual States or of total funds required to meet "needs" without careful review of the limitations cited in the report.

TABLE 2

COSTS REPORTED FOR CONSTRUCTION OF PUBLICLY-OWNED WASTEWATER TREATMENT FACILITIES*
(millions of 1973 dollars)

		Total Costs Reported for Facilities	I-Improvement of Treatment Plants to Achieve Secondary Level	II-Costs to Achieve More Stringent Treatment Levels	III-Correction Of Infiltration/ Inflow Conditions	IVa-Eligible New Interceptors Force Mains, Pumping Stations	IVb-Costs of Eligible New Collectors	V-Reduction of Combined Sewer Overflows
REGION I	Connecticut	1,409	179	46	18	205	225	736
	Maine	364	124	1	1	135	97	16
	Massachusetts	1,485	459	51	11	251	77	636
	New Hampshire	508	174	13	2	152	102	65
	Rhode Island	367	61	7	1	94	169	35
	Vermont	176	65	16	9	34	32	20
REGION II	New Jersey	3,382	1,458	321	18	851	532	202
	New York	8,032	1,556	731	11	1,878	876	2,980
	Puerto Rico	590	169	-	2	225	194	-
	Virgin Islands	44	13	-	-	19	12	-
REGION III	Delaware	329	84	7	4	110	62	62
	Maryland	635	217	143	2	176	96	1
	Virginia	1,345	516	137	12	345	208	127
	West Virginia	614	96	3	14	224	268	9
	Pennsylvania	4,196	870	133	40	538	1,026	1,589
	District of Columbia	1,081	2	48	1	2	1	1,027
REGION IV	Alabama	444	130	19	4	161	130	-
	Florida	2,345	858	142	14	687	641	3
	Georgia	1,031	338	136	7	303	200	47
	Kentucky	1,032	165	84	9	324	293	157
	Mississippi	268	88	60	5	75	40	-
	North Carolina	735	288	125	2	199	121	-
	South Carolina	757	326	6	5	237	183	-
	Tennessee	695	234	10	5	223	211	12
REGION V	Illinois	4,153	1,055	872	291	369	191	1,375
	Indiana	1,081	260	116	4	211	99	391
	Michigan	3,651	530	103	13	919	1,243	843
	Minnesota	1,120	423	17	9	197	149	326
	Ohio	3,265	865	595	342	794	478	191
	Wisconsin	782	207	45	13	229	121	167
REGION VI	Arkansas	355	97	1	-	126	130	1
	Louisiana	445	95	-	3	152	195	-
	New Mexico	109	43	-	6	12	49	-
	Texas	826	304	4	7	334	177	-
	Oklahoma	627	208	23	2	256	138	-
REGION VII	Iowa	502	236	44	7	141	50	24
	Kansas	671	141	24	2	167	316	21
	Missouri	972	442	9	3	329	189	-
	Nebraska	399	151	-	15	32	31	170
REGION VIII	Colorado	426	175	20	20	115	74	22
	Montana	74	34	-	1	25	13	1
	North Dakota	45	17	-	-	12	8	8
	South Dakota	43	31	3	1	6	2	-
	Utah	225	148	-	1	22	53	1
	Wyoming	40	20	-	-	10	10	-
REGION IX	Arizona	264	102	3	-	73	86	-
	California	6,048	2,252	1,452	7	1,023	541	773
	Hawaii	523	222	4	-	213	84	-
	Nevada	227	39	119	-	47	22	-
	American Samoa	9	3	-	-	4	2	-
	Guam	22	17	-	-	3	2	-
	Trust Territories	8	4	-	-	2	2	-
	Wake Island	-	-	-	-	-	-	-
REGION X	Alaska	205	80	-	-	73	44	8
	Idaho	112	40	3	1	33	35	-
	Oregon	563	135	-	2	146	130	150
	Washington	1,080	284	5	2	247	299	243
TOTAL:		60,736	17,130	5,701	948	13,770	10,749	12,438

*Costs ineligible under the survey guidelines are excluded. Costs are affected by limitations of survey design, inconsistency in reporting, variations in planning status among States, and other variables explained in the report. Therefore, the costs should not be considered indicative of equitable shares for individual States or of total funds required to meet "needs" without careful review of the limitations cited in the report.

TABLE 3 STATE PERCENTAGE OF NATIONAL COSTS REPORTED FOR CONSTRUCTION OF PUBLICLY-OWNED TREATMENT FACILITIES*

		Total Costs Reported for Facilities	CATEGORIES OF NEEDED FACILITIES					
			I-Improvement of Treatment Plants to Achieve Secondary Level	II-Costs to Achieve More Stringent Treatment Levels	III-Correction of Infiltration/ Inflow Conditions	IVa-Eligible New Interceptors Force Mains, Pumping Stations	IVb-Costs of Eligible New Collectors	V-Reduction of Combined Sewer Overflows
		Percentage	Percentage	Percentage	Percentage	Percentage	Percentage	Percentage
REGION I	Connecticut	2.32	1.05	0.81	1.90	1.49	2.09	5.92
	Maine	.60	.72	0.02	0.11	0.98	0.81	0.13
	Massachusetts	2.45	2.68	0.89	1.16	1.82	0.72	5.11
	New Hampshire	.84	1.02	0.23	0.21	1.10	0.95	0.52
	Rhode Island	.60	.36	0.12	0.11	0.68	1.57	0.28
	Vermont	.29	.38	0.28	0.95	0.25	0.30	0.16
REGION II	New Jersey	5.57	8.51	5.63	1.90	6.18	4.95	1.62
	New York	13.23	9.07	12.82	1.16	13.64	8.15	23.96
	Puerto Rico	.97	.99	-	0.21	1.63	1.80	-
	Virgin Islands	.07	.08	-	-	0.14	0.11	-
REGION III	Delaware	.54	.49	0.12	0.42	0.81	0.58	0.50
	Maryland	1.05	1.27	2.51	0.21	1.28	0.89	0.01
	Virginia	2.21	3.01	2.40	1.27	2.51	1.94	1.02
	West Virginia	1.01	.56	0.05	1.47	1.63	2.49	0.07
	Pennsylvania	6.91	5.08	2.33	4.21	3.91	9.55	12.78
	District of Columbia	1.78	.01	0.84	0.11	0.01	0.01	8.26
REGION IV	Alabama	.73	.76	0.33	0.42	1.17	1.21	-
	Florida	3.86	5.01	2.49	1.48	4.99	5.96	0.02
	Georgia	1.70	1.97	2.39	0.74	2.21	1.86	0.38
	Kentucky	1.70	.96	1.47	0.95	2.35	2.73	1.26
	Mississippi	.44	.51	1.05	0.53	0.54	0.37	-
	North Carolina	1.21	1.68	2.19	0.21	1.44	1.13	-
	South Carolina	1.25	1.90	0.10	0.53	1.72	1.70	-
	Tennessee	1.14	1.37	0.18	0.53	1.62	1.96	0.10
REGION V	Illinois	6.84	6.16	15.30	30.69	2.68	1.78	11.05
	Indiana	1.78	1.51	2.04	0.42	1.53	0.92	3.14
	Michigan	6.01	3.09	1.81	1.37	6.67	11.56	6.78
	Minnesota	1.84	2.47	0.30	0.95	1.43	1.39	2.61
	Ohio	5.38	5.05	10.44	16.07	5.77	4.45	1.54
	Wisconsin	1.29	1.21	0.80	1.36	1.66	1.13	1.34
REGION VI	Arkansas	.58	.57	0.02	-	0.92	1.21	0.01
	Louisiana	.73	.56	-	0.32	1.10	1.81	-
	New Mexico	.18	.25	-	0.53	0.09	0.46	-
	Texas	1.36	1.77	0.07	0.74	2.43	1.65	-
	Oklahoma	1.03	1.21	0.40	0.21	1.86	1.28	-
REGION VII	Iowa	.83	1.38	0.77	0.74	1.02	0.47	0.19
	Kansas	1.10	.82	0.42	0.21	1.21	2.94	0.17
	Missouri	1.60	2.58	0.16	0.32	2.39	1.76	-
	Nebraska	.66	.88	-	1.57	0.23	0.29	1.37
REGION VIII	Colorado	.70	1.02	0.35	2.11	0.84	0.69	0.18
	Montana	.12	.20	-	0.11	0.18	0.12	0.01
	North Dakota	.07	.10	-	-	0.09	0.07	0.06
	South Dakota	.07	.18	0.05	0.11	0.04	0.02	-
	Utah	.37	.86	-	0.11	0.16	0.49	0.01
	Wyoming	.07	.12	-	-	0.07	0.09	-
REGION IX	Arizona	.43	.60	0.05	-	0.53	0.80	-
	California	9.97	13.15	25.47	0.74	7.43	5.03	6.22
	Hawaii	.86	1.30	0.07	-	1.55	0.78	-
	Nevada	.37	.23	2.09	-	0.34	0.20	-
	American Samoa	.01	.02	-	-	0.03	0.02	-
	Guam	.04	.10	-	-	0.02	0.02	-
	Trust Territories	.01	.02	-	-	0.01	0.02	-
	Wake Island	-	-	-	-	-	-	-
REGION X	Alaska	.34	.47	-	-	0.53	0.41	0.06
	Idaho	.18	.23	0.05	0.11	0.24	0.32	-
	Oregon	.93	.79	-	0.21	1.06	1.21	1.21
	Washington	1.78	1.66	0.09	0.21	1.79	2.78	1.95
	TOTAL	100.00	100.00	100.00	100.00	100.00	100.00	100.00

*Costs ineligible under the survey guidelines are excluded. Costs are affected by limitations of survey design, inconsistency in reporting, variations in planning status among States, and other variables explained in the report. Therefore, the costs should not be considered indicative of equitable shares for individual States or of total funds required to meet "needs" without careful review of the limitations cited in the report.

Table 4

PER CAPITA COSTS REPORTED FOR CONSTRUCTION OF PUBLICLY-OWNED TREATMENT FACILITIES BASED ON 1972 POPULATION AND PROJECTED 1990 POPULATION 1]

		Total Costs Reported For Facilities (Millions of 1973 Dollars)	1972 Population (000s)	Costs per Capita (1972 Pop) $	1990 Projected Population (000s)	Costs per Capita (1990) $
REGION I	Connecticut	1,409	3,082	457	3,946	357
	Maine	364	1,029	354	1,142	319
	Massachusetts	1,485	5,787	257	7,052	211
	New Hampshire	508	771	659	907	560
	Rhode Island	367	968	379	1,134	324
	Vermont	176	462	381	536	328
REGION II	New Jersey	3,382	7,367	459	8,822	383
	New York	8,032	18,366	437	21,799	368
	Puerto Rico	590	-	-	-	-
	Virgin Islands	44	-	-	-	-
REGION III	Delaware	329	565	582	732	449
	Maryland	635	4,056	157	5,001	127
	Virginia	1,345	4,764	282	5,958	226
	West Virginia	614	1,781	345	1,811	339
	Pennsylvania	4,196	11,926	352	13,332	315
	District of Columbia	1,081	748	1,445	764	1,415
REGION IV	Alabama	444	3,510	126	3,850	115
	Florida	2,345	7,259	323	9,159	256
	Georgia	1,031	4,720	218	5,667	182
	Kentucky	1,032	3,299	313	3,741	276
	Mississippi	268	2,263	118	2,359	114
	North Carolina	735	5,214	141	5,880	125
	South Carolina	757	2,665	284	3,023	250
	Tennessee	695	4,031	172	4,800	145
REGION V	Illinois	4,153	11,251	369	13,177	315
	Indiana	1,081	5,291	204	6,433	168
	Michigan	3,651	9,082	402	10,961	333
	Minnesota	1,120	3,896	287	4,577	245
	Ohio	3,265	10,783	303	13,202	247
	Wisconsin	782	4,520	173	5,218	150
REGION VI	Arkansas	355	1,978	179	2,068	172
	Louisiana	445	3,720	120	4,159	107
	New Mexico	109	1,063	103	1,232	88
	Texas	826	11,649	71	13,666	60
	Oklahoma	627	2,634	238	2,942	213
REGION VII	Iowa	502	2,883	174	3,053	164
	Kansas	671	2,258	297	2,509	267
	Missouri	972	4,753	205	5,488	177
	Nebraska	399	1,525	262	1,562	255
REGION VIII	Colorado	426	2,357	181	2,848	150
	Montana	74	719	103	714	104
	North Dakota	45	632	71	606	74
	South Dakota	43	679	63	643	67
	Utah	225	1,126	200	1,293	174
	Wyoming	40	345	116	348	115
REGION IX	Arizona	264	1,945	136	2,500	106
	California	6,048	20,468	295	26,601	227
	Hawaii	523	809	646	962	544
	Nevada	227	527	431	829	274
	American Samoa	9	-	-	-	-
	Guam	22	-	-	-	-
	Trust Territories	8	-	-	-	-
	Wake Island	0	-	-	-	-
REGION X	Alaska	205	325	631	408	502
	Idaho	112	756	148	758	148
	Oregon	563	2,182	258	2,493	226
	Washington	1,080	3,443	314	4,194	258
TOTAL:		60,736	208,232	288 2]	246,859	243 2]

1] Costs ineligible under the survey guidelines are excluded. Costs are affected by limitations of survey design, inconsistency in reporting, variations in planning status among States, and other variables explained in the report. Therefore, the costs should not be considered indicative of equitable shares for individual States or of total funds required to meet "needs" without careful review of the limitations cited in the report.

2] National per capita cost excludes Puerto Rico and Territories.

APPENDIX A. INELIGIBLE COSTS REPORTED BY THE STATES

Table 5 shows total costs reported by the States and divides them into those eligible and those ineligible under the survey guidelines. Most or all of the costs reported by the majority of the States were considered eligible. These States for the most part agreed to reduce or eliminate the costs which they initially reported in the survey and EPA reviewers determined to be ineligible. An allocation formula based on ineligible as well as eligible costs would obviously be unfair to these States.

Kentucky reported a far higher proportion of ineligible costs than any other State. Its estimates were provided in lump sums for each category without any supporting data. The numbers were typed on a strip of paper without explanation and pasted on top of each questionnaire filled out by municipal authorities in the State. Most of the cost estimates prepared by the local authorities and reported and justified inside the forms were found to be eligible, but the much higher costs added by the State lacked the required justification.

Ineligible costs reported in categories III and V explain many of the remaining differences between the States' estimates and estimates accepted as eligible. These costs were not supported by the studies required in the survey guidelines. Excessive costs for collector sewers also affected the totals for a few States.

A large part of the differences between State and EPA estimates for New York and Kansas can be accounted for by ineligible costs reported for new sewers planned to replace old sewers which are failing structurally, but are not subject to excessive infiltration/inflow. Replacement sewers of this sort were not included in the survey because they are considered to be outside the scope of the municipal grants program. Over $1.2 billion for replacement sewers was nevertheless included by New York City in its reported costs. A substantial portion of the costs reported by Kansas and determined to be ineligible were also for this type of facility.

TOTAL COSTS REPORTED BY STATES FOR CONSTRUCTION OF PUBLICLY-OWNED TREATMENT FACILITIES CLASSIFIED AS TO ELIGIBILITY UNDER SURVEY GUIDELINES*
(Millions of 1973 Dollars)

TABLE 5

		Total Costs Reported	Costs Eligible Under Survey Guidelines	Costs Ineligible Under Survey Guidelines
REGION I	Connecticut	1,436	1,409	27
	Maine	368	364	4
	Massachusetts	1,486	1,485	1
	New Hampshire	530	508	22
	Rhode Island	484	367	117
	Vermont	178	176	2
REGION II	New Jersey	3,414	3,382	32
	New York	9,481	8,032	1,449
	Puerto Rico	590	590	-
	Virgin Islands	44	44	-
REGION III	Delaware	338	329	9
	Maryland	637	635	2
	Virginia	1,476	1,345	131
	West Virginia	615	614	1
	Pennsylvania	4,228	4,196	32
	District of Columbia	1,087	1,081	6
REGION IV	Alabama	448	444	4
	Florida	2,426	2,345	81
	Georgia	1,053	1,031	22
	Kentucky	2,655	1,032	1,623
	Mississippi	269	268	1
	North Carolina	749	735	14
	South Carolina	757	757	-
	Tennessee	773	695	78
REGION V	Illinois	4,181	4,153	28
	Indiana	1,087	1,081	6
	Michigan	3,710	3,651	59
	Minnesota	1,128	1,120	8
	Ohio	3,396	3,265	131
	Wisconsin	898	782	116
REGION VI	Arkansas	356	355	1
	Louisiana	446	445	1
	New Mexico	119	109	10
	Texas	826	826	-
	Oklahoma	627	627	-
REGION VII	Iowa	502	502	-
	Kansas	783	671	112
	Missouri	1,142	972	170
	Nebraska	412	399	13
REGION VIII	Colorado	429	426	3
	Montana	74	74	-
	North Dakota	45	45	-
	South Dakota	43	43	-
	Utah	235	225	10
	Wyoming	40	40	-
REGION IX	Arizona	275	264	11
	California	6,558	6,048	510
	Hawaii	523	523	-
	Nevada	227	227	-
	American Samoa	9	9	-
	Guam	22	22	-
	Trust Territories	8	8	-
	Wake Island	-	-	-
REGION X	Alaska	205	205	-
	Idaho	112	112	-
	Oregon	584	563	21
	Washington	1,080	1,080	-
TOTAL :		65,604	60,736	4,868

*Costs are affected by limitations of survey design, inconsistency in reporting, variations in planning status among States, and other variables explained in the report. Therefore, the costs should not be considered indicative of equitable shares for individual States or of total funds required to meet "needs" without careful review of the limitations cited in the report.

APPENDIX B - REASONS 1973 SURVEY RESULTS ARE HIGHER THAN PREVIOUS "NEEDS" ESTIMATES

EPA and FWPCA limited their estimates of "needs" during the years 1969-1971 to the cost of needed treatment plants and interceptor sewers. Costs for facilities of these types were reported in the 1973 survey in categories I and II (treatment) and part of category IV (interceptors). Three other types of costs were also included in the 1973 survey, but not previous estimates of needs. These are the costs of rehabilitating sewers to reduce infiltration and inflow (category III in the survey), constructing needed collector sewers (part of category IV), and correcting overflows of combined sewers (category V).

Total costs reported in the survey are $60.7 billion, of which $36.6 billion is for treatment plants and interceptors (categories I, II and part of IV). This total is considerably higher than previous estimates of needs. FWPCA's estimate in 1969 was $10.02 billion. EPA's estimates rose from $12.6 billion in 1970 to $18.1 billion in 1971.

Between the 1971 and 1973 estimates, EPA obligated about $3.6 billion for municipal treatment facilities from funds appropriated for fiscal years 1967-1974. These sizeable obligations met some of the needs identified in previous estimates, and therefore must be counted as part of the difference between the 1973 survey results and previous estimates. A large proportion ($16.3 billion) of the contract authority provided by the 1972 Act was not obligated at the time of the survey, however, and remains available for construction of facilities identified in the 1973 survey.

The 1973 survey results and previous estimates of needs by EPA and FWPCA differ primarily for the following reasons:

1. New Nationwide Requirements for Secondary Treatment

The requirement in the 1972 Act that all municipal treatment plants provide secondary treatment by mid-1977 is a higher standard than many localities had to meet previously.

2. New Requirements to Meet Water Quality Standards

During the last few years water quality standards for many of the Nation's waterways have been established, or strengthened where already established. The level of secondary treatment necessary to meet these new standards is sometimes higher than the secondary treatment required for the Nation as a whole by the 1972 Act. Special processes also must often be added to meet standards for pollutants such as phosphorous, ammonia, nitrates and organic substances.

3. Inflation

The costs of construction have increased rapidly during the last several years. The Engineering News Record's cost index for construction rose 19.3%, for example, during the two years between the 1971 and 1973 needs surveys.

4. More Communities Included

The States made special efforts to see that the final survey results reflected the needs of as many communities as possible. Coverage was far more comprehensive than for previous estimates of needs.

5. Increasing Attention to Water Pollution Control at the Local Level

The general interest in improving water quality and the increasingly stringent Federal, State and local requirements for wastewater treatment have induced many municipalities during recent years to intensify their efforts to estimate needs for treatment facilities. More and more engineering studies have been completed on which detailed estimates of costs can be based.

APPENDIX C - SURVEY METHODOLOGY

1. Background. Local estimates of the cost of needed municipal treatment facilities have been consolidated into overall national totals almost every year since 1959. The Conference of State Sanitary Engineers made an estimate each year from 1959 to 1966 in its annual report. The Federal Water Pollution Control Agency and EPA have made annual estimates since 1969. The estimates by FWPCA and EPA have been based on information in their files about existing facilities and pending needs. Much of it was assembled and supplied by State Water Pollution Control Agencies. EPA supplemented this information in 1970 with two surveys and in 1971 with still another survey of cities with the largest anticipated needs.

The approach used in 1973 of surveying most municipal treatment and collection authorities has the advantages of obtaining an up-to-date assessment of costs for facilities from the local level where costs can best be calculated, and of providing data about existing and projected treatment and collection facilities, sewage treated and population served.

2. Preparation of the Survey. The 1973 Survey was prepared and conducted by an inter-office task force within EPA. The scope of the survey was defined, and the questionnaire drawn up over a five-month period from December 1972 through April 1973, during which the task force consulted with representatives from EPA's Regional Offices and the States in several working sessions. The questionnaire went through many revisions as an effort was made to define terms carefully and strike a balance between comprehensiveness and comprehensibility.

3. Conduct of the Survey. Several hundred questionnaires were mailed out in advance to the EPA Regions and all the States so that they could become familiar with the form and the data which would have to be collected. During June a team was sent to each Region to brief regional personnel who would be responsible for the survey, and at least one representative from each State. The briefings included a general discussion of the survey approach as well as an item by item description of what was requested on the survey form.

The task force prepared nine "procedural bulletins" to assist with the conduct of the survey and provide guidelines for review of the results. These bulletins supplemented and clarified the instructions for completing the survey forms and delineated responsibilities of the States and EPA Regional Offices for distributing, reviewing, and processing questionnaires.

States were asked to distribute survey questionnaires to all municipal treatment authorities which could be identified within Standard Metropolitan Statistical Areas, and all authorities outside SMSA's serving places of 10,000 or more. Places of less than 10,000 outside of SMSAs could be sampled, and detailed instructions about the sampling techniques to be used were provided in a procedural bulletin. A total of 35 States chose to sample, and the costs reported in the sample were increased in proportion to the ratio between population in places of less than 10,000 outside SMSAs and the population of the sampled places.

Procedures for distribution of the questionnaires were described in a procedural bulletin. No comprehensive lists of treatment authorities were available, but EPA provided the States with four partial lists of authorities to supplement State listings.

The questionnaires were completed from June through August by the local treatment authorities, State Water Pollution Control Agencies or both working together.

4. Review Process. Municipal treatment authorities sent their completed questionnaires to the States for review and approval. The States were provided guidelines in a procedural bulletin for checking the completeness and accuracy of the forms. They were asked to approve the forms after their review and forward them to the EPA Regions for further review. A detailed checklist as well as cost curves were provided so Regional personnel could make a quick check of the completeness of the forms and the reasonableness of the costs reported. Regional staffs were assisted by personnel from EPA, Washington and reviewers hired under a contract with TRACOR-JITCO.

Most problems uncovered by personnel in the Regional Offices were solved and the questionnaires corrected by telephone conversations with State personnel. In some cases EPA personnel traveled to the States for further discussions. The Regional Offices submitted a separate cost estimate in the cases where differences with the State agencies could not be resolved, and these revised figures are reflected in EPA's estimate of costs in this report.

The questionnaires were then sent to Washington where they were coded for computer processing and mailed to the Bureau of Census office in Jeffersonville, Indiana for transcription to computer tapes. The Census Bureau then returned the questionnaires to Washington where EPA personnel checked all the questionnaires again for reviewing errors, with particular attention to the forms from authorities reporting costs over $20 million. When patterns of errors were found for a State or Region, Regional personnel were called in to help with the review of the forms from the area.

The Census Bureau developed the programs with which to tabulate the data on the tapes. All the tabulations and the costs in the entire data file were carefully checked and corrected.

APPENDIX D. SURVEY QUESTIONNAIRE

O.M.B. No. 158-R0017; Approval Expires September 30, 1974

1. Authority and facility number ⇨ ☐☐ – ☐☐☐☐ – ☐☐☐

FORM EPA-1

ENVIRONMENTAL PROTECTION AGENCY

1973 SURVEY OF NEEDS FOR MUNICIPAL WASTEWATER TREATMENT FACILITIES

A. PREPARATION OF QUESTIONNAIRE

(To be completed by person who provided technical information)

The attached forms describe to the best of my knowledge and ability all new or existing facilities required to achieve the effluent limitations specified by Sections 301(b)(1)B and/or C of the Federal Water Pollution Control Act of 1972, as amended.

NAME *(Please print)*

TITLE

ORGANIZATION

BUSINESS ADDRESS

TELEPHONE *(Area code and number)* | DATE

SIGNATURE

B. AUTHORITY REVIEW AND APPROVAL

I have reviewed the attached forms on behalf of the authority identified, and to the best of my knowledge the data contained herein are accurate.

NAME *(Please print)*

TITLE

TELEPHONE *(Area code and number)* | DATE

SIGNATURE

C. REVIEW AND APPROVAL BY STATE AGENCY

The data contained herein have been reviewed and except as noted are hereby approved as a correct statement of the costs of needed publicly-owned treatment works pursuant to Sections 516(b) and 205 of the FWPCA of 1972, as amended.

NAME *(Please print)*

TITLE

TELEPHONE *(Area code and number)* | DATE

SIGNATURE

D. REVIEW AND APPROVAL BY EPA REGIONAL OFFICE

The data contained herein have been reviewed and except as noted by this office and in my opinion represent reasonable costs of eligible and needed publicly-owned treatment works within the scope of the 1973 Survey of Needs for Municipal Wastewater Treatment Facilities.

NAME *(Please print)*

TITLE

TELEPHONE *(Area code and number)* | DATE

SIGNATURE

D-1-a

GUIDELINES CONTAINING DEFINITIONS AND INFORMATION

PLEASE READ CAREFULLY BEFORE STARTING

This questionnaire consists of a 36 page booklet divided into 8 sections. The right-hand pages contain the items to be completed; instructions pertaining to each right-hand page are printed on each facing (left-hand) page.

The questionnaire has been designed to be completed by a **Treatment Authority** (*see definition below*) for each **Treatment Facility** which it now operates or expects to operate in the future. However, under certain conditions, the questionnaire may be entirely or partially completed by a State agency, or by consulting engineers or others engaged for this purpose. In such cases, the instructions should be interpreted accordingly.

Section I, "SUMMARY OF TREATMENT AUTHORITY NEEDS," comprises the first page to be completed (*Page 5 of the questionnaire*). The remaining Sections deal with the characteristics of a particular Treatment Facility. **A separate questionnaire must be completed for each existing or proposed facility for which a Treatment Authority is responsible;** however, Section I should be filled out **one time only**, on that questionnaire used to describe the **first** facility operated by the Authority.

For purposes of this survey, a **Treatment Authority** means any unit of a State, county, or city government, or any other non-Federal unit of government, which is responsible for the collection and/or treatment of municipal wastewaters. A Treatment Authority may be a unit of a local government, such as the Board of Public Works of a particular city, or it may be a special-purpose agency established to provide services to a particular area, such as a metropolitan sewer and water authority. The area served by an authority may be limited to a particular town or part of a single city or county; on the other hand, it may include all or part of a number of cities, towns, counties or other places. Determining which authorities are responsible for providing sewage collection and treatment services to which areas is one objective of this survey.

In some areas, there may be one Authority responsible for collection of wastewaters and another Authority responsible for treating them. In such cases, each Authority should submit questionnaires describing their respective functions and eligible needs within the scope of this survey. The questionnaire provides that only those sections relevant to collection need be filled out by an Authority which is only responsible for collection services, etc. Establishing the interrelationships between Authorities with different functions, which can be quite complex, is another objective of this survey.

In some areas, no unit of government may have been designated as responsible for either the collection or the treatment of sewage. Not all areas of the country require such services; if the State agency has determined that the concentrations of population and other sources of pollution in a particular county do not require local sewage services, it may so notify EPA, and no questionnaires need be completed for such counties. However, it is considered that all populated places above 500 persons should be represented in this survey, either directly or indirectly. (Some States may elect to estimate needs of their smaller communities on the basis of a random sample.) Questionnaires may be submitted for smaller places if local conditions require publicly-owned treatment works.

In areas where there appears to be a need for collection and/or treatment services, but no unit of government has been designated as responsible for providing them, the following guidelines apply:

- If the area is in an incorporated place, then the government of that place should be considered to be the Treatment Authority.
- If the area is not incorporated, then the county government, such as the Board of County Supervisors, is presumed to be the Treatment Authority.

State Water Pollution Control Agencies may modify the above guidelines for determining Treatment Authorities, if State law provides for a different residual responsibility, or, in New England, where the township constitutes the unit of local government closest to "county."

This survey is restricted to publicly-owned treatment works, which include treatment plants, sewers, and many other types of treatment facilities. The term Treatment Facility is used in this survey to mean all such publicly-owned works. Privately-owned facilities, even if they serve the general public, are excluded. Septic tank systems which are publicly owned are included, but septic tanks owned by individuals are not.

Authority and Facility Number – In this survey, every existing and proposed facility is uniquely identified by a combined Authority and Facility number. This Authority-Facility number is derived as follows:

- **Authority Number** – Each State agency will assign Authority numbers to each Authority in its State. Generally, this is done before the questionnaire is distributed. However, since all Authorities may not be known before the survey starts, some questionnaires may be distributed without an Authority number, which will be assigned after the questionnaire is returned to the State agency. **DO NOT ATTEMPT TO ASSIGN AN AUTHORITY NUMBER TO YOUR AUTHORITY IF YOU DO NOT ALREADY HAVE ONE.** However, you should copy your assigned number onto any additional questionnaires you need to complete. (For example, if you have additional facilities for which no pre-numbered questionnaires were received, or if a pre-numbered questionnaire was damaged and had to be replaced.)

  The Authority number consists of six digits. The first two are a coded number which designates a particular State. (Alabama is 01, etc.) The next four numbers are assigned sequentially by each State agency, using whatever consistent system is most convenient. The first Authority number in Alabama, for instance, would be designated 01-0001.

- **Facility Number** – Facility numbers ordinarily will be assigned by each Authority; however, if the State agency already has a complete inventory of facilities operated by each Authority, it may itself assign facility numbers to all facilities of which it has a record, **provided** that it also completes enough of items 9 and 10 on page 7 to identify the facility for the Authority.

  Facility numbers should be assigned to each existing and proposed facility. Do **NOT** skip numbers in assigning facility numbers. Questionnaires should be numbered and completed for all existing facilities before numbering facilities now under construction or which have been approved for a grant. Complete all of the latter before numbering any proposed facilities.

SUMMARY OF TREATMENT AUTHORITY NEEDS

GENERAL INSTRUCTIONS – ITEMS 1 – 8

This summary identifies and describes each "Treatment Authority" which now operates one or more "Treatment Facilities", or which is expected to operate such facilities in the future. This summary also shows the number and costs of all Needs reported in the survey for all facilities operated or proposed by this Authority.

This page is to be completed only **once** by each Authority. If the Authority is responsible for more than one facility, it should complete this page for its first facility only, and merely insert the Authority-Facility number on this page for each questionnaire completed for its other facilities.

Items 1 thru 4 should be completed **before** completing the remainder of the questionnaire, which deals with the characteristics and needs of each facility. Items 5 thru 8 cannot be completed until questionnaires have been completed for **all** facilities now operated or proposed by this Authority.

SPECIFIC INSTRUCTIONS – ITEMS 1 – 8

1. Copy the Authority Number from the cover page and then insert the Facility Number. Then transcribe the combined Authority-Facility number to the top of each right-hand page of the questionnaire.

2. The **official name** of the Authority is the name which is used to legally identify it. If several such names exist, use the name contained in the most recent Federal construction grant, if still appropriate. If the Authority is a unit of a city or county government, please identify the unit. *(For example, Department of Sanitation, City of Auckland, rather than merely "Auckland" or "Lancaster County.")*

3. **Mailing Address** – In addition to the mailing address most commonly used on mail sent to the Authority, please show the name of the county in which the city or town is located. Draw a line through the boxes for city or town if this is NOT part of the mailing address. Draw a line through the boxes for the county, if the city or town is not part of a county. If the city is itself a county or county-equivalent, write "Same" in the boxes for County.

4. **Location Codes** – Leave blank. These will be completed by the State agency or by EPA.

COMPLETE FOLLOWING ITEMS AFTER ALL QUESTIONNAIRES FOR ALL FACILITIES UNDER THIS AUTHORITY HAVE BEEN COMPLETED.

5. **Services Provided to Resident Population** – The purpose of this question is to determine what services are provided (from any source) to the resident population within the service area of the Authority. Service area is defined as that geographic area for which the Authority is responsible for supplying treatment and/or collection services. It includes any enclaves which receive no services (e.g., the residents may be served by private septic tanks, outhouses, etc.).
   a. Resident population excludes transient, seasonal, daytime and industrial population equivalents and can be based on (i.e., reconcilable with) either the 1970 Census or a 1972-73 estimate. This number will be the total of entries 5b through e.
   b. While this condition is found frequently in rural areas, there are many instances where individual septic tanks, cesspools, etc., exist in urban and suburban areas. All such residents should be included in this category.
   c. This line includes that portion of the population served by sewers, drainage ditches, etc., which are not connected to treatment plants, and consequently discharge untreated wastes into streams.
   d. This line includes that portion of the population served by sewers connected to a treatment plant, where, however, the level of treatment, for whatever reason, is less than the secondary level, as defined by EPA. *(For this definition, see item 21, page 14.)*
   e. This line includes that portion of the population served by sewers connected to a treatment plant where the level of treatment is equal to or higher than the secondary level defined by EPA.
   f. Indicate, by marking the appropriate box, the basis for data reported on resident population.

6. Indicate either "Yes" or "No" by marking the appropriate box.

7. a. Enter the total number of facilities for which a questionnaire was completed. A separate questionnaire must be completed for each existing, under construction or proposed facility.
   b. Enter the total number of questionnaires which contain at least one cost entry in Section III through VII, "Assessment of Needs by Type and Cost."

8. This entry will be the summation of the costs recorded in item 38f for each facility within this Authority which reported one or more needs on its questionnaires.

Section I – SUMMARY OF TREATMENT AUTHORITY NEEDS

1. Authority and facility number ☐☐ – ☐☐☐☐ – ☐☐☐

2. Official name of authority

3. Mailing address of authority
NUMBER OR BOX | STREET OR ROUTE
CITY OR TOWN
COUNTY | STATE | ZIP CODE

STATE OR EPA USE
4. Location codes — STATE *(FIPS 5)* ☐☐ | COUNTY *(FIPS 6)* ☐☐☐ | PLACE CODE *(See Instructions)* ☐☐☐☐

Complete following items after all questionnaires for all facilities under this authority have been completed.

SERVICES PROVIDED TO RESIDENT POPULATION (FROM ANY SOURCE)	Number
5a. Total resident population within service area of authority	
b. Resident population receiving neither collection nor treatment services (e.g., served by septic tanks, cesspools, outhouses, etc.)	
c. Resident population receiving collection services but no treatment services (i.e., collected sewerage is discharged raw)	
d. Resident population receiving treatment of less than secondary level, as defined by EPA	
e. Resident population receiving treatment equal to or better than secondary level, as defined by EPA	
	Mark (X) appropriate box
f. Basis of data on resident population	1 ☐ 1970 Census 2 ☐ 1972 or 73 estimate

ASSESSMENT OF AUTHORITY NEEDS	*Mark (X) appropriate box*
6. Does this authority have needs for additional or modified wastewater treatment facilities to meet the July 1, 1977 requirements of Section 301(b)(1) of the Act? *(The reporting of resident populations under 5b indicates a possible, and the reporting of resident populations under either 5c or 5d a probable need for additional treatment facilities.)*	1 ☐ Yes 2 ☐ No
NUMBER OF PUBLICLY-OWNED WASTEWATER FACILITIES WITHIN THIS AUTHORITY	Number
7a. Total number of questionnaires completed	
b. Number with needs	
TOTAL COSTS OF NEEDS IDENTIFIED BY THIS AUTHORITY	Amount *Report in thousands*
8. Total cost of needs	$

SUMMARY OF FACILITY DATA

GENERAL INSTRUCTIONS – ITEMS 9 – 20

Pages 6 through 13 of the questionnaire comprise "Section II – Summary of Facility Data." The entries in Section II identify the particular type of facility this is, its present status, whether it currently expects to change its status, what area(s) the facility serves, and the extent of the services it provides.

In this survey, a "Treatment Facility" will usually consist of a waste treatment plant, plus all collector and interceptor sewers, pumping stations, or other auxiliary facilities which feed into the plant and **which are under the control of the same Treatment Authority** which operates the treatment plant. In most cases, therefore, a treatment facility will consist of an entire wastewater treatment system, and only one Needs questionnaire should be completed, no matter how elaborate the system. Separate questionnaires on each collector sewer, pumping station, etc., whether existing or proposed, are not required, **except** as specified below.

Occasionally, a Treatment Authority only operates a sewage plant; another authority is responsible for collection. In this case, the first authority completes a questionnaire for the plant only; the second authority completes one for the collection system only, and indicates that treatment of its discharges is provided by the first authority.

A community septic tank system, in which a number of houses discharge their wastes to one septic tank owned by their local government (or other non-Federal unit of government), is considered to be a Treatment Facility.

SPECIFIC INSTRUCTIONS – ITEMS 9 – 12b

9. The "Facility name" should be the name most frequently used by the Authority to identify this facility.

10. The "Facility address" entry should be completed only for treatment plants. Unless the treatment plant is physically located at the same address as the Authority, this address will be different from that reported in item 3, "Mailing address of authority." Sufficiently identify the plant so that it can be located on a city or county map. If a conventional street address is not appropriate, descriptive directions should be used. *(For example, "2 miles north on Hampton Road.")* Please show the name of the county in which the plant is located, in addition to the name of the city or town. Draw a line through the boxes for city if the facility is not located in a town.

11. Record the number of the Congressional District(s) to which this facility provides service. *(For example, for a plant which serves the third and seventh districts, enter "03" and "07".)*

12a. Indicate, by marking the appropriate box, the present operational status of this facility. The applicable conditions are explained on the questionnaire itself.

b. Indicate, by marking the appropriate box, the existing (or, if new, the proposed) type of facility this is. The applicable conditions are explained on the questionnaire itself.

Authority and Facility No. ▶ ___ ___ – ___ ___ ___ ___ ___ – ___ ___ ___

Section II – SUMMARY OF FACILITY DATA

9. Facility name	
10. Facility address *(Physical location)*	STREET NUMBER / STREET NAME CITY OR TOWN COUNTY / STATE / ZIP CODE
11. Congressional districts served	A ☐☐ B ☐☐ C ☐☐

EXISTING AND PROJECTED STATUS OF THIS FACILITY	*Mark (X) one box for each item below*	EPA USE ONLY
12a. What is the **present** status of this facility?	1 ☐ Now in operation – not being modified or replaced by construction underway or provided for in an approved grant. 2 ☐ Now in operation and is being modified or replaced by construction underway or will be by a grant which has been approved. 3 ☐ Not now in operation but is now under construction or will be built under a grant which has been approved. 4 ☐ Not now in operation and is **not** now under construction or provided for by a grant which has been approved (i.e., this is a proposed facility which has not yet been funded by a Federal grant).	
b. What is the nature of this facility, as it now exists or if new, as proposed?	1 ☐ A complete wastewater treatment system (includes a treatment plant, with associated collector and/or interceptor sewers, and methods for disposal of effluent, under control of the same treatment authority). 2 ☐ A separate treatment plant. (The sewers which discharge to this plant are under the control of one or more different authorities.) 3 ☐ A community septic tank system. (A publicly-owned facility, including any sewers which discharge to it.) 4 ☐ A separate municipal wastewater collection system. (Includes one or more connected collector and/or interceptor sewers, force mains, pumping stations, etc., which either discharge without treatment or discharge to a facility controlled by a different authority. Do **not** include combined sewers or storm sewers.) 5 ☐ A separate combined sewer system. (Includes one or more interconnected sewers which carry both sanitary wastewaters and storm waters, and which either discharge without treatment or to a facility operated by another authority. If facility includes both separate sanitary sewers and combined sewers, report as combined.) 6 ☐ Other type of facility – *Describe briefly* →	

SPECIFIC INSTRUCTIONS – ITEM 12c – 12e(2)

12c. Complete this entry only if box 2 in item 12a was marked. Indicate the nature of the changes which are now underway or provided for in an approved grant. The applicable conditions are explained on the questionnaire itself.

d. The purpose of this question is to determine to what extent the nature of the facility will change as of July 1, 1977. Consider all needs to be reported in this survey, as well as any other changes, and mark the appropriate box. The applicable alternatives are explained on the questionnaire itself.

e. Complete these entries only if box 3 in item 12b, and/or box 3 in item 12c, and/or box 5 in item 12d are marked.

(1) Indicate, by marking the appropriate box, the manner in which the residue from the septic tank is disposed of.

(2) Indicate, by marking the appropriate box, what alternative will be chosen to replace the present septic tank system.

Authority and Facility No. ▶ __ __ – __ __ __ – __ __ __

Section II – SUMMARY OF FACILITY DATA – Continued

EXISTING AND PROJECTED STATUS OF THIS FACILITY – Continued

Complete ONLY if box 2 in item 12a was marked.

12c. What is the nature of the changes to this existing facility which are now underway or provided for in an approved grant?

Mark (X) one box

1 ☐ Nature of facility will not change – modification of existing facility only.
2 ☐ Nature of facility will not change – existing facility is being replaced by similar facility in a similar location.
3 ☐ Nature of facility will change – septic tank system being replaced.
4 ☐ Nature of facility will change – treatment plant being added to existing sewer system.
5 ☐ Nature of facility will change – sewer system being added to existing treatment plant without its own sewers.
6 ☐ Nature of facility will change – existing combined sewer system being replaced by separate sanitary and/or storm water systems.
7 ☐ Other type of changes – *Describe briefly* →

_____

EPA USE ONLY

d. What change is projected in the nature of this facility as of July 1, 1977, from that reported in item 12b?

(Consider all needs reported in this survey and any other changes.)

Mark (X) one box

1 ☐ None, while modifications, additions, etc., are needed, the nature of this facility will remain as reported in item 12b.
2 ☐ None, will remain as reported in item 12b, and no needs are reported for this facility in this survey.
3 ☐ This facility will be discontinued – services will be provided by one or more facilities in other locations.
4 ☐ This facility will be replaced by a similar facility in a similar location. (Do not report this type of change for a facility with a treatment plant unless the plant is entirely or substantially to be replaced.)
5 ☐ Existing septic tank system will be replaced.
6 ☐ Treatment plant will be added to existing sewage collection system.
7 ☐ Sewage collection being added to existing treatment plant without its own sewers.
8 ☐ Existing combined sewer system will be replaced by new separate sanitary and/or storm system.
9 ☐ Other type of change – *Describe briefly* →

_____

e. Septic tank system characteristics

Complete ONLY if box 3 in item 12b was marked.

(1) To what does this system discharge? (How is residue from septic tanks disposed of?)

Mark (X) applicable responses

1 ☐ To a stream
2 ☐ Below ground in tank area (gravel bed, etc.)
3 ☐ Surface land disposal
4 ☐ By truck, barge, or other transport
5 ☐ Other means – *Describe* →

_____

Complete ONLY if box 3 in item 12c or box 5 in item 12d was marked.

(2) If this septic system is now being or proposed to be replaced, what will it be replaced by?

1 ☐ Sewage will be sent by sewer to another authority for treatment.
2 ☐ Sewage will be treated by treatment system operated by this authority. (Includes sewers and treatment plant.)
3 ☐ Sewage will be treated by new plant, without sewers for which this authority is responsible.
4 ☐ Other type of replacement – *Describe* →

_____

SPECIFIC INSTRUCTIONS – ITEMS 13a – 15b

13a. Answer "Yes" if this facility discharges its wastes to another facility under the control of a different Authority. The most common example would be a sewer facility under the control of one Authority, transporting wastes to a treatment plant under the control of a different Authority. If "Yes," continue with 13b, c, and d; otherwise, skip to item 14.

b. Record the official (legal) name of the Authority to which discharged. If the Authority is a unit of a city or county government, please identify the unit.

c. Record the name commonly used by the receiving Authority to identify the receiving facility.

d. Sufficiently identify the facility so that it can be located on a city map. This can be a conven ional address, or descriptive directions, if more appropriate. Show the name of the county in which the receiving facility is located. Draw a line through the boxes for city or town if a name of a city is not part of the location address. If the facility discharges to a sewer, the location address of the facility is not applicable. In this case, mark the box provided in 13d.

14. Complete this entry only if boxes 2 or 3 in item 12c, and/or boxes 3, 4, or 5 in item 12d are marked. If so, report the estimated date the facility will be discontinued, and the name and location of the facility which will replace this facility.

15a. Print the names of each county or "county equivalent" to which this facility provides collection and/or treatment services. *("County equivalents" are independent cities, which are not part of counties, in Maryland (Baltimore City), Missouri (St. Louis City), Nevada (Carson City), and Virginia (38 cities). The Census Divisions of Alaska, which has no counties, are also county equivalents. Authorities in Alaska and Virginia will be given listings of the county equivalents in their States; other Authorities, except those in the three cities mentioned above, need not be concerned with "county equivalents," only with counties.)*

b. For each county named, mark the appropriate box to indicate whether all or part of the county is served.

GENERAL INSTRUCTIONS – ITEM 16

The purpose of this question is to determine to what extent the present and projected populations which either reside in, or work or visit, the area served by this facility receive collection and/or treatment services. Estimates are to be based on the best available data for the current (1972–73) period and for the year 1990.

Authorities are not required to explain how they developed their estimates of populations served or unserved; however, they should be prepared to answer any questions raised by their State agency. Local or regional planning agencies in most States can provide assistance to Authorities in relating their population projections to the particular area served by a given facility.

An overall survey restriction is that the total resident 1990 population projected for an entire State cannot exceed the population projected by the Department of Commerce under the "Series E" projection. State agencies have received both the overall "E" projection for their State, and 1990 projections for each of their Metropolitan Areas (SMSA's) and each county outside an SMSA. These latter projections are provided as baseline estimates only; if a State feels more growth will occur in one area and less in another, these estimates can be adjusted by the State, as long as the total 1990 projection for the State does not exceed its "E" projection.

The term non-resident applies to transient, seasonal, and daytime (working) populations which do not reside in the service area of the facility, but whose wastes must be taken into consideration in designing facilities. (Non-resident population does **not** include any form of "population-equivalent" based on industrial or commercial flows.) A hypothetical example would be a downtown business area with a resident population of ten thousand but a daytime, working population of twenty-five thousand. The non-resident population would thus be fifteen thousand.

The "area served by this facility" includes not only the boundaries of the areas actually served, but also any enclaves whose residents are served by septic tanks, outhouses, etc. There is no necessary implication that all residents who do not now receive waste treatment services **must** do so; however, all such areas should be reviewed by the Authority to be sure that their domestic sewage is being handled in a manner which is not in violation of the 1977 requirements on discharges or of applicable State plans or water quality standards.

If an Authority has only one facility, the area served by the facility is the same as that served by the Authority. If an Authority has more than one facility, it should divide up the total area it is responsible for, so that every part lies within an area served by one (or more) of its existing or proposed facilities.

The area served by a facility may change between 1972–1973 and 1990. Report each on the basis of current plans and expectations of the Authority.

SPECIFIC INSTRUCTIONS – ITEMS 16a – 16i

16a. Indicate in the spaces provided the 1970 population, the 1972–73 estimated population, and the 1990 projected population for those persons residing within the area served by the facility. *(The 1970 population should be reconcilable with the 1970 Census Bureau population reported for area(s) served by the facility.)*

b. This line includes all persons residing in the service area of the facility who are served by **acceptable** septic tanks, community or individual.

c. This line includes all persons who now receive collection services from this facility, regardless of whether their sewers are connected to a treatment plant or not. *(**NOTE** – Residents and Non-residents must be stated separately.)*

d. Report the population residing in the service area of this facility who receive collection services from a **different** authority, whether or not their sewers are connected to a treatment plant.

e. This is the population residing in the service area of the facility that is not receiving collection services. *(**NOTE** – Lines b, c, d and e must equal line a.)*

f. Report the population, both Resident and Non-resident, who receive treatment services from this facility of less than secondary level, as defined by EPA.

g. Report the population, both Resident and Non-resident, who receive treatment services from this facility equal to or exceeding the secondary level as defined. *(This line represents approximately the design population for which new or modified facilities reported in this survey.)*

h. Report population residing in the service area of the facility who receive treatment services, regardless of level, from a facility under the jurisdiction of a different Authority.

i. This is the total population residing in the service area of the facility which does **not** receive treatment services. *(**NOTE** – Lines b, f, g, h, and i must also equal line a.)*

Authority and Facility No. ▶ ___ ___ – ___ ___ ___ ___ – ___ ___ ___

Section II – SUMMARY OF FACILITY DATA – Continued

CHARACTERISTICS OF DISCHARGE FROM FACILITY

EPA USE ONLY

13a. Does this facility discharge to another facility under the control of a **different** authority?
1 ☐ Yes – *Continue with 13b below*
2 ☐ No – *SKIP to item 14 below*

b. Name of authority to which discharged

c. Name of facility to which discharged

d. Physical location address of facility to which discharged
STREET NUMBER | STREET NAME
CITY OR TOWN
COUNTY | STATE | ZIP CODE
☐ Not applicable, this facility discharges to a sewer

Complete ONLY if response to item 12c or 12d indicated a wastewater treatment plant will be discontinued.

TERMINATION OF FACILITY

	Month	Year
14a. Estimated date to be discontinued		

b. Name and location of replacement facility

COUNTIES AND COUNTY EQUIVALENTS SERVED BY THIS FACILITY

EPA USE ONLY

15a. Name of county or county-equivalents served by this facility	b. Is all or part of this county served?	Area served	FIPS-6 code
(1)	1 ☐ All 2 ☐ Part		
(2)	1 ☐ All 2 ☐ Part		
(3)	1 ☐ All 2 ☐ Part		
(4)	1 ☐ All 2 ☐ Part		

POPULATION SERVED BY THIS FACILITY

Report present and projected populations for area served by this facility

	Population based on 1970 Census (1)	Estimated population 1972–1973 (2)		Population projected for year 1990 (3)	
		Resident	Nonresident	Resident	Nonresident
16a. Total **resident** population in area served by this facility*					
b. **Resident** population receiving services from acceptable septic tanks, community or individual					
c. Population receiving collection services from this facility					
d. **Resident** population receiving collection services from another facility					
e. **Resident** population **NOT** receiving collection services					
f. Population receiving treatment services of less than secondary level as defined, from this facility					
g. Population receiving treatment services equal to or exceeding secondary level from this facility					
h. **Resident** population receiving treatment services from another facility					
i. **Resident** population **NOT** receiving treatment services					

*Lines b, c, d, and e must equal line a; lines b, f, g, h, and i must also equal item a.

GENERAL INSTRUCTIONS – ITEM 17

The purpose of this question is to determine the current and projected flow and concentration levels, the present design specifications, and if applicable, the projected design specifications for the plant. This data will pertain to levels of secondary treatment or below. Data regarding levels of treatment above secondary treatment are reportable under items 25 and 26.

Existing means the actual average concentration, based on 24-hour observations during the month, made during 1973, of influent only for flows, and both influent and effluent concentration levels for suspended solids and five-day BOD.

Projected actual means the influent and effluent concentration levels anticipated for the year 1990, or, if a final design has been completed for this plant for a year other than 1990, **which meets the secondary treatment requirement**, then for the design year.

Present design is the influent and effluent levels which the plant is presently intended to handle.

Projected design is the influent and effluent levels which the plant will be designed to handle for the year 1990, unless a design study based on a different year has been completed.

The projected design column (4) need not be completed **if** it is the same as the projected actual given in column (2); in this case, simply write "same" for each applicable entry.

Neither the projected actual nor the projected design column need be completed if the plant is to be discontinued prior to July 1, 1977; in this case, write "Disc." in the appropriate boxes.

SPECIFIC INSTRUCTIONS – ITEMS 17a – 19b

17a. Total flow means all the wastewaters moving through the plant. This figure should be reported in million gallons per day.

b. Industrial flow is that amount of flow, moving through the plant, that originates from industrial sources. This figure should be reported in million gallons per day.

c. For suspended solids, use the conventional definition. This figure should be reported in milligrams per liter (mg/l).

d. For BOD_5 (Biological Oxygen Demand), use the conventional definition. This figure should be reported in milligrams per liter (mg/l).

e. Indicate the temperature on which the design of this facility, as proposed for modifications, or other changes in this survey, will be based. Record the temperature in degrees Fahreheit.

18a. Indicate, by marking an entry in each line, whether the respective procedure is (1) Now in use (whether or not now being modified or will be proposed for modification), (2) Under construction or provided for in an approved grant, (3) Required but not yet approved or funded, or (4) does not apply (e.g., not needed now or in the future by this facility).

b. Report the daily average of dry solids produced in pounds per day.

19a. Indicate, by marking an entry in each line, whether the respective procedure is: (1) now in use (whether or not now being modified or will be proposed for modification); (2) under construction or provided for in an approved grant; (3) Required but not yet approved or funded; or, (4) does not apply (e.g., not needed now or in the future by this facility).

b. The appropriate units for reporting the daily load or volumn of the liquid effluent are: (1) For surface and deep ocean outfalls, record the length of pipe in feet. (2) For holding ponds, record the capacity in million gallons; (3) For deep wells, indicate the depth of the well in feet; (4) For ground water recharge, other land disposal, recycling water supply, and septic tank field, indicate the length of pipe in feet; (5) For "Other," specify type and unit.

GENERAL INSTRUCTIONS – ITEM 20

Navigable waters are defined by Section 502 of the Act as including "all waters of the United States, including the territorial seas." This includes all waters which are navigable, all tributaries of such waters, all interstate waters and their tributaries, and all intrastate lakes, rivers, and streams which are used by interstate travelers for recreational purposes or from which fish or shellfish are taken and sold in interstate commerce, or which are utilized for industrial purposes by industries in interstate commerce.

SPECIFIC INSTRUCTIONS – ITEMS 20a – 20c

20a. Based on the above definition, indicate the name of the navigable waters to which the facility discharges. If the plant discharges to a creek, ditch, stream, etc., give the name of the creek, etc., plus the name of the stream or river which it flows into.

b. Indicate, by marking the appropriate box, whether an application for a National Pollutant Discharge Elimination System (NPDES) permit has been made for this discharge.

c. If an application has been submitted, report the number in the spaces provided, if known. If not known, put a "?" in first box.

Authority and Facility No. ▶ — — – — — — — — – — — —

Section II – SUMMARY OF FACILITY DATA – Continued

EXISTING, PROJECTED, AND DESIGN FLOWS AND CONCENTRATIONS	Existing average concentration during month (1)		Average concentration during month: Projected – Actual (2)		Present design (3)		Projected design – 1990 (4)	
	Influent	Effluent	Influent	Effluent	Influent	Effluent	Influent	Effluent
17a. Total flow (*Mil. Gal./Day*)								
b. Total industrial flow (*MGD*)								
c. Suspended solids concentration (*mg/l*)								
d. BOD_5 concentration (*mg/l*)								

e. On what temperature of the influent has the design of this facility, including its proposed modifications, been based? *Degrees (fahrenheit)* ⟶

SLUDGE HANDLING PROCEDURES	Now in use (1)	Under construction or provided for in approved grant (2)	Required but not yet approved or funded (3)	Not applicable (4)	EPA USE ONLY
18a. Procedures now used or required					
(1) Thickening	1 ☐	2 ☐	3 ☐	4 ☐	
(2) Digestion	1 ☐	2 ☐	3 ☐	4 ☐	
(3) Dewatering	1 ☐	2 ☐	3 ☐	4 ☐	
(4) Drying beds	1 ☐	2 ☐	3 ☐	4 ☐	
(5) Heat treatment	1 ☐	2 ☐	3 ☐	4 ☐	
(6) Incineration	1 ☐	2 ☐	3 ☐	4 ☐	
(7) Other – *Specify* _____	1 ☐	2 ☐	3 ☐	4 ☐	
b. Daily average of dry solids (*Pounds per day*)					
PROCEDURES FOR DISPOSAL OF LIQUID EFFLUENTS					
19a. Procedures now used or required					
(1) Outfall to surface waters	1 ☐	2 ☐	3 ☐	4 ☐	
(2) Ocean outfall	1 ☐	2 ☐	3 ☐	4 ☐	
(3) Holding pond	1 ☐	2 ☐	3 ☐	4 ☐	
(4) Deep well	1 ☐	2 ☐	3 ☐	4 ☐	
(5) Ground water recharge	1 ☐	2 ☐	3 ☐	4 ☐	
(6) Other land disposal	1 ☐	2 ☐	3 ☐	4 ☐	
(7) Recycling water supply	1 ☐	2 ☐	3 ☐	4 ☐	
(8) Septic tank field	1 ☐	2 ☐	3 ☐	4 ☐	
(9) Other – *Specify* _____	1 ☐	2 ☐	3 ☐	4 ☐	
b. Daily load or volume (*Use appropriate units – See instructions*)					

DISCHARGE TO NAVIGABLE WATERS

Major/minor basin code: — — — —

20a. What is the name of the waters to which discharged?

b. Has an application for a National Pollutant Discharge Elimination System (NPDES) permit been filed for this discharge?

1 ☐ Yes – *Continue with item 20c*
2 ☐ No . . . . . } *SKIP to item 21a*
3 ☐ Not known
4 ☐ Not required

c. What is the application number? ⟶ — — — — — — — — — —

ASSESSMENT OF NEEDS BY TYPE AND COST

GENERAL INSTRUCTIONS – ITEM 21

This page is to be completed if the facility being described in this questionnaire is one of the following:

- An existing or proposed publicly-owned treatment plant.
- An existing publicly-owned community septic tank system.
- An existing sewer, drainage ditch, or other treatment works *(as defined in the Act)* which discharges untreated municipal sewage into a stream.

The "required level of secondary treatment" which all facilities identified above must meet by July 1, 1977 is the most stringent of the following:

- The level promulgated by the Environmental Protection Agency, pursuant to Section 304(d)(1) of the Act. This level was published as Section 102, Part 133, Title 40, Code of Federal Regulations. For purposes of this survey, the following effluent levels, as prescribed in this Regulation, shall be used to determine whether a facility is meeting or will meet the Secondary Treatment level promulgated by EPA:

Characteristic of discharge	Unit of measurement	Average concentration during month *(Based on 24-hour observations)*
Biochemical oxygen demand (5-day)	mg/l	30
Suspended solids	mg/l	30
Fecal coliforms	No. per 100ml	200
Hydrogen ion concentration	pH units	between 6.0 and 9.0

- A higher treatment level, established by a particular State and applicable to the basin in which lies the stream to which this facility discharges. ***NOTE*** *– This type of higher level of required* ***secondary*** *treatment must be distinguished from the "more stringent than secondary treatment" levels covered in Needs Category II (items 25 and 26).*

SPECIFIC INSTRUCTIONS – ITEMS 21a – 21e(8)

21a. Some plants, especially in small towns discharging to relatively large streams with few other sources of pollution, may not have to treat their wastes to the level of secondary treatment applicable to their plant for the stream to which they discharge to meet the water quality standards ("WQS") applicable to it. Mark "Yes" if this situation applies to this plant, mark "No" if this plant must achieve the secondary treatment level or a more stringent level if the stream to which it discharges is to meet its WQS. Mark "Not known" if the applicable WQS is not known, or if the relationship between the discharge level from this plant and stream quality has not been determined, and mark "Not applicable" if the plant does not discharge to a stream (e.g., it is a community septic tank system which has no discharge.)

b. Mark applicable box and supply information requested, (e.g., 90% removal; 20 mg/l BOD_5 level; etc.) based on definition in General Instructions above.

c. Based on definitions in General Instructions above.

d. Assume that all changes to this facility now underway, or which have been provided for by an approved grant, will be completed by July 1, 1977. If your answer is "No," complete the remainder of item 21 and the applicable parts of items 22, 23, and 24 to indicate what will need to be done to achieve the required secondary treatment level.

e. Complete if response to 21d was "No,"

(1) This procedure applies **only** to spraying or otherwise exposing untreated or partially treated sewage to land, in lieu of using conventional secondary treatment procedures to reduce pollutant levels. It does not apply to methods for disposing of treated effluents by irrigation, etc.

(2) Mark this **only** if a treatment plant is needed where one does not now exist. If a community septic tank is to be replaced by a treatment plant, mark here.

(3) Mark this box if an existing **treatment plant** is to be entirely or substantially replaced (i.e., at least 75% of the proposed capacity is a replacement or addition to an existing plant.)

(4) to (8) Self-explanatory.

Authority and Facility No. ▶ ___ ___ – ___ ___ ___ ___ ___ – ___ ___ ___

Section III – CATEGORY I – ASSESSMENT OF NEEDS BY TYPE AND COST

ASSESSMENT OF NEEDS TO ACHIEVE REQUIRED LEVEL OF SECONDARY TREATMENT	*Mark appropriate box for each item*	EPA USE ONLY
21a. Can this plant meet water quality standards applicable to the stream segment to which it discharges by a level of treatment LESS than defined as secondary treatment by EPA?	1 ☐ Yes 2 ☐ No 3 ☐ Not known 4 ☐ Not applicable; no discharge to waters	
b. What level of secondary treatment must the discharge from this plant meet by July 1, 1977?	1 ☐ Secondary treatment level as defined by EPA, **OR** 2 ☐ Higher level of secondary treatment required by State – *Specify* Higher level secondary treatment Nature of State action	
c. Does the discharge from this plant **NOW** meet the level of secondary treatment identified in 21b?	1 ☐ Yes 2 ☐ No	
d. Will the discharge from this plant meet on July 1, 1977, the level of secondary treatment identified in 21b? *(Give consideration to changes in flow and concentration of influents and to the changes in treatment capability now under construction or provided for in approved grants.)*	1 ☐ Yes – *SKIP to item 25* 2 ☐ No	
e. Which approaches will be used to enable this existing or proposed plant to meet the secondary treatment level identified in 21b?	1 ☐ Yes 2 ☐ No	
(1) Addition of land disposal as a means of treatment	1 ☐ Yes 2 ☐ No	
(2) New plant – no replacement of existing plant	1 ☐ Yes 2 ☐ No	
(3) Replacement plant	1 ☐ Yes 2 ☐ No	
(4) Modification – no change in capacity or treatment level	1 ☐ Yes 2 ☐ No	
(5) Modification – increase in capacity	1 ☐ Yes 2 ☐ No	
(6) Modification – increase in treatment level	1 ☐ Yes 2 ☐ No	
(7) Improved operation and maintenance; increase staffing	1 ☐ Yes 2 ☐ No	
(8) Reduce infiltration	1 ☐ Yes 2 ☐ No	

GENERAL INSTRUCTIONS – ITEM 22

If item 21d is "Yes," **DO NOT** record costs in this item. However, if "No," was marked in 21d, estimated costs should be reported if the projected data in item 17 have been supplied. Select only those processes to be used and complete each corresponding line. Indicate the estimated cost and the basis for the cost estimate in item 22. Exclude operation, maintenance, and staffing (not considered needs) and reduced infiltration (covered in item 28).

Express cost in terms of capital costs only; do not include operation and maintenance costs.

SPECIFIC INSTRUCTIONS – ITEMS 22a – 24b

22a. Report the total estimated costs for all primary treatment processes to be used.

b. (1) Mark which type *(one only)* of secondary treatment process is needed, and report its cost.
(2) Indicate the additional capital cost of the process marked in 22b(1) for handling sludge generated by this plant.

c. Indicate the cost of disinfection. Omit the cost of chemicals.

d. Indicate the cost of any procedures for disposing of liquid effluents that were marked "Required but not yet approved or funded" in item 19.

e. Report costs only if items 21e(1) and 23a are marked "Yes." The estimated cost is for all costs of land treatment procedures, **excluding** the cost of the land. Equipment and construction costs are examples of costs which can be reported on this line.

f. Report the estimated cost of land to be used in land treatment procedures. Complete **only** if item 22e was completed. The land to be used must be acquired by the plant.

g. This is the subtotal of lines 22a thru f.

23. If the specified cost analysis has been made, remember that costs should be reported in 22e and f, and that the information requested in 23b must be supplied. If this analysis has not been made, do **not** record any costs in 22e and f.

24a. Indicate the year in which construction of these Needs is expected to begin.

b. Indicate the year in which construction of these Needs is expected to be completed.

Authority and Facility No. ▶ __ __ – __ __ __ __ – __ __ __

Section III – CATEGORY I – ASSESSMENT OF NEEDS BY TYPE AND COST – Continued

CODES AND DEFINITIONS FOR BASIS OF COST ESTIMATE *(For use in column (2) below)*

1 – Actual contract costs
2 – Bid/proposal from completed specifications
3 – Engineer/consultant firm estimate
4 – Cost of previous comparable construction
5 – Engineer/consultant preliminary estimate
6 – EPA-supplied cost estimating procedures

ADDITIONAL COSTS TO ACHIEVE REQUIRED LEVEL OF SECONDARY TREATMENT *Complete cost data ONLY for those processes to be used*	Cost *Report in thousands* (1)	Basis of cost estimate *From above* (2)
22a. Primary treatment processes	$	
b. Secondary treatment processes		
(1) Type and cost of process used *(Mark (X) one box and enter cost in column (1))* → 1 ☐ Trickling filter; 2 ☐ Activated sludge; 3 ☐ Lagoon; 4 ☐ Other – *Specify* _____		
(2) Capital cost only of sludge handling procedures		
c. Disinfection *(Omit the cost of chemicals)*		
Complete ONLY for items marked in column (3) in item 19 d. Costs for disposal of liquid effluents		
Complete items 22e and 22f ONLY if item 23a below is marked "Yes" e. Costs of land treatment procedures, excluding land		
f. Costs of land, for land treatment ONLY		
g. **Subtotal** – Cost of Category I needs →	$	

Complete ONLY if item 21e(1) is marked "Yes"

EXPLANATION OF LAND TREATMENT ALTERNATIVE FOR ACHIEVING REQUIRED LEVEL OF SECONDARY TREATMENT

EPA USE ONLY

23a. Has a cost analysis been made of this proposal which demonstrates it to be a more effective or economical solution to the need to provide secondary treatment of these waste waters than conventional secondary treatment procedures? *(NOTE: Do not submit needs for land treatment projects unless such an analysis has been made.)*

1 ☐ Yes → 2 ☐ No – *SKIP to item 23c*

b. Identify this study and indicate where a copy can be obtained

Name/title		
Author		Authority
Date	Location of copy	

c. Acreage required for land treatment — Acreage

ESTIMATED CONSTRUCTION DATES OF CATEGORY I NEEDS

24a. Construction is expected to begin *(Year)* — 19 __ __

b. Construction is expected to be completed *(Year)* — 19 __ __

GENERAL INSTRUCTIONS – ITEM 25

An **effluent limitation "more stringent" than secondary** means a requirement for treatment processes, in addition to secondary treatment processes, necessary to meet an effluent limitation specified in an EPA-approved water quality plan, an administrative or court order, a license, etc., or by a water quality standard, which is binding on the treatment facility. Examples include requirements to remove phosphorus, ammonia, nitrates, or organic substances.

Approved water quality plans are primarily those required by 40 CFR 150.1 and .2 (formerly 18 CFR 601). Such water quality plans have been designated as **basin, metropolitan,** or **regional** plans. These plans are now considered to be "interim plans" and constitute an acceptable basis for determining Needs until July 1, 1973, when new, more comprehensive, basin plans are to be submitted to meet requirements of the new Act, under Sec. 303(e). These basin plans, after their approval by EPA, will then replace the former 18 CFR 601 basin plans. After July 1, 1973, the metropolitan and regional plans will begin to be replaced by Sec. 201 areawide plans. Any new plans approved by EPA pursuant to Sections 303(e) or 201 constitute an acceptable basis for reporting Needs; however, few of these are expected to be approved in time to affect this survey.

A body of water is **water quality dependent** if some or all the discharges to it will need treatment "more stringent" than secondary treatment levels to meet a water quality level specified by the State. The basis for this classification is that a State, after careful analysis of the extent and sources of pollution affecting a particular stream segment, has determined that the level of secondary treatment defined by EPA or an applicable State law will not be sufficient to achieve or maintain the water quality standards applicable to this body of water. Required discharge levels will be designated by each State as part of its "continuing planning process." A Treatment Authority having questions about possible designation as "water quality dependent" of streams to which its facilities discharge should contact its State pollution control agency.

SPECIFIC INSTRUCTIONS – ITEM 25b

25b. Indicate which **reason for need** imposes the most stringent requirement. If 25a is marked "Yes" be sure to mark which type of order, permit, or other administrative requirement is applicable and to describe the specific order, plan, or action, and indicate where a copy can be obtained, where required. If the document has no title, show the title of the basin or stream to which the requirement applies. Indicate the number of the plan, if there is an applicable document number, and the person or agency who authored the document. Include the date of EPA approval where applicable.

Authority and Facility No. ▶ — — – — — — — — – — — —

Section IV – CATEGORY II – ASSESSMENT OF NEEDS BY TYPE AND COST

Complete 25 and 26 for treatment plant only

ASSESSMENT OF NEEDS TO PROVIDE "MORE STRINGENT" LEVEL OF TREATMENT THAN SECONDARY

25a. Is the discharge from this treatment plant required to meet an effluent limitation **more stringent** than secondary treatment?

1 ☐ Yes → 2 ☐ No – *Skip to item 27*

b. Reason for need *(Mark the box below which imposes the most stringent requirement)*

0 ☐ A water quality plan which has been approved by EPA
(Identify this plan and indicate where a copy can be obtained) →

Name/title	Number	Date
Author	Date of EPA approval	
Location of copy		

☐ A State or Federal court, permit or license, administrative order, or other enforcement or regulatory action binding upon this facility. *(Mark (X) the appropriate box and identify below this court order, permit stipulation, or other administrative requirement)*

1 ☐ Order of State Court
2 ☐ Order of Federal Court
3 ☐ State permit or license
4 ☐ Federal permit or license
5 ☐ State enforcement order or proceeding
6 ☐ Federal enforcement order or proceeding
7 ☐ Voluntary agreement which includes a schedule of compliance or improvements
8 ☐ Other – *Specify* → _____

Court order, permit stipulation, or other administrative requirement

9 ☐ A certification by the State that the body of water receiving this discharge is water quality dependent, and that more stringent treatment is needed to meet Federally-approved water quality standards for dissolved oxygen or nutrients.

Identify nature and date of State action which is basis for certification; indicate level of dissolved oxygen and/or nutrient permitted in stream and the effluent limitations imposed on this discharge. (NOTE: State agency must be prepared to supply additional data to EPA upon request to support its certification of the need for treatment beyond secondary)

Nature of State action	
	Date

ASSESSMENT OF NEEDS BY TYPE AND COST – Continued

GENERAL INSTRUCTIONS – ITEM 26

Report the specific needs and costs for those removal processes which this treatment plant must install or upgrade to meet those requirements identified in item 25b. Include capital costs, but not operation and maintenance costs. All costs must be supported by data on existing and projected concentrations; if these are not known, please do not report costs.

Existing total concentration means the actual average concentration during the month, based on 24-hour observations made during 1973, of the influent and effluent levels for the particular substances (e.g., nitrates, organics) for which treatment beyond secondary is required.

In this section of the questionnaire, the **influent** concentration is the level of the substance in question **after** existing or projected secondary treatment, if any, has been applied. (In other words, the influent concentration is the effluent from secondary.) The **effluent** concentration level is the level of effluent from the plant, after any "beyond secondary" processing is completed. If no treatment beyond secondary now exists, the existing influent and effluent levels will be the same.

If an existing "beyond secondary" process is to be upgraded, the difference between the existing influent and effluent levels represents the removal attributable to the existing process; the projected levels will reflect the removal attributable to the upgraded process.

The **projected design effluent concentration** must be sufficient to achieve the most stringent effluent limitations identified in item 25b.

SPECIFIC INSTRUCTIONS – ITEMS 26 – 27b

26a. **Phosphorus removal** includes all unit processes, except for sludge handling, used to remove phosphorus. Examples include chemical storage, mixing and coagulation, and lime clarification tanks added to an existing treatment facility. Express phosphorus concentrations for phosphorus ("P") only, not as phosphates ("PO_4").

b. **Ammonia removal** includes all unit processes, except sludge handling, used either to remove ammonia, or to convert ammonia to nitrate in wastewaters. Examples include nitrification activated sludge systems, clinoptilolite ion exchange, breakpoint chlorination, and air stripping. Express ammonia concentrations as NH_3 only, not as NH_4OH, etc.

c. **Nitrate removal** includes all unit processes, except sludge residue handling, which remove nitrate from wastewater, such as ion exchange or anaerobic biological denitrification. Express nitrate concentrations as NO_3 only, not as NO_x or as NO_3 compounds, etc.

d. **Organics removal** includes all unit processes, except sludge residue handling, which are used to remove those organic compounds which are not degraded normally by biological treatment. Examples include activated carbon adsorption and ozonation. Be sure to indicate whether chemical oxygen demand (COD) or total organic carbon (TOC) is the basis for estimating influent/effluent concentrations.

e. **Polishing lagoon** includes various types of construction for temporarily retaining effluents from secondary treatment stages to provide time for additional reduction of effluents, in order to achieve concentration levels more stringent than secondary. This process is to be distinguished from the type of lagoon used to achieve secondary treatment per se *(see item 22b(1))*, and also from the type of lagoon used to store wastewaters prior to treatment *(see item 36b)*.

f. **Other processes** include those needed to remove pesticides, heavy metals, toxic materials, total dissolved solids, and other substances not elsewhere identified. If such a process is required, indicate both its name and the unit in which its concentration is best expressed in the space provided, and report the existing and projected influent and effluent levels, the cost, and the basis of the cost estimate. Most of these substances are measurable in milligrams per liter; however, some substances (e.g., radioactive materials) may be best expressed in other units of concentration. If more than one such special process is required, report its characteristics in item 32, but include its costs in line 26g.

g. This line is the subtotal of all costs reported on lines 26a thru f, plus any additional Category II costs reported in item 32.

27a. Indicate the year in which construction of these Needs is expected to begin.

b. Indicate the year in which construction of these Needs is expected to be completed.

GENERAL INSTRUCTIONS – ITEMS 28a – 28j

Section 201(g)(3) of the Act provides that no grant can be awarded after July 1, 1973, unless the applicant satisfactorily demonstrates that the sewer collection system discharging into the proposed treatment works is not subject to "excessive infiltration". Section 201(g)(4) authorizes Federal assistance for sewer system evaluation studies to determine whether there is excessive infiltration. Specific definitions and requirements pertaining to excessive infiltration were published February 23, 1973, in the Federal Register (page 5330, 40 CFR 35.905, 35.925–7).

SPECIFIC INSTRUCTIONS – ITEMS 28a – 28e

28a. The total length of the existing sewer system includes all types of sewers connected to the same system, including collectors, interceptors, combined, force mains, etc. Report this figure in feet.

b. Each applicant for a grant must show that it has performed or will perform an analysis demonstrating the existence or nonexistence of excessive infiltration/inflow in each sewer system tributary to the treatment works proposed in the grant. The analysis shall identify the presence, quantity, and type of any infiltration/inflow conditions. Indicate the status of this analysis by marking the appropriate box.

c. Record either the actual or the estimated cost of the analysis.

d. If a completed infiltration/inflow analysis shows that the sewer system must be subject to excessive infiltration/inflow, a systematic sewer system evaluation survey, must be undertaken, after approval by the Regional Administrator. This evaluation shall state the specific location, condition, estimated rate of flow, and estimated cost of rehabilitation for each identified source of infiltration/inflow into the sewer system. The report shall propose a program of rehabilitation to correct those conditions determined to be excessive. Indicate the status of this survey, where one is required, by marking the appropriate box.

e. Record the actual cost of the Sewer System Evaluation Survey if the survey has been completed. Record the estimated cost if the survey is required but is in some stage short of completion.

Authority and Facility No. ▶ __ __ – __ __ __ __ – __ __ __

Section IV – CATEGORY II – ASSESSMENT OF NEEDS BY TYPE AND COST – Continued

CODES AND DEFINITIONS FOR BASIS OF COST ESTIMATES *(For use in column 4 below)*

1 – Actual contract costs
2 – Bid proposal from completed specifications
3 – Engineer/consultant firm estimate
4 – Cost of previous comparable construction
5 – Engineer/consultant preliminary estimate
6 – EPA-supplied cost estimating procedures

Complete ONLY, if applicable data required on 25b has been supplied **COST OF NEEDS TO ACHIEVE TREATMENT LEVEL MORE STRINGENT THAN SECONDARY TREATMENT**	Existing average concentration during month (1)		Projected design, average concentration during month (2)		Cost *Report in thousands* (3)	Basis for cost estimate *From above* (4)
	Influent	Effluent	Influent	Effluent		
26a. Phosphorus removal *(mg/l)*					$	
b. Ammonia removal *(mg/l)*						
c. Nitrate removal *(mg/l)*						
d. Organics removal *(Mark (X) one box)* 1 ☐ COD 2 ☐ TOC						
e. Polishing lagoon — Required capacity *Million gallons*						
f. Other – *Specify type and unit of measurement* → *(See instructions for this item)*						
g. **Subtotal** – Cost of all Category II needs →					$	

ESTIMATED CONSTRUCTION DATES OF CATEGORY II NEEDS

27a. Construction is expected to begin *(Year)* 19__ __

b. Construction is expected to be completed *(Year)* 19__ __

Section V – CATEGORY III – ASSESSMENT OF NEEDS BY TYPE AND COST

ASSESSMENT OF NEEDS FOR CORRECTION OF INFILTRATION/INFLOW CONDITIONS

28a. Total length of existing sewer system *(Report in feet)* — Feet

b. Status of analysis to determine the existence of infiltration/inflow conditions *(Mark (X) one box)*

1 ☐ Detailed analysis not yet started . . . . . }
2 ☐ Analysis now underway . . . . . } *Complete items 28c and j, then continue with item 30a*
3 ☐ Analysis completed: no infiltration correction necessary . . . . }
4 ☐ Analysis completed: excessive infiltration may exist – *Continue with item 28c*

EPA USE ONLY

c. Cost of analysis *(Report in thousands)* → $

d. Status of cost-effective sewer system evaluation survey *(Mark (X) one box)*

1 ☐ Not required . . . . . }
2 ☐ Required: plan not yet developed . . . . } *Complete items 28e and j, then SKIP to item 30a*
3 ☐ Plan developed: survey not yet started }
4 ☐ Survey in progress . . . . . }
5 ☐ Survey completed – *Identify this survey and indicate where a copy can be obtained*

Title/description

Date | Location of copy

EPA USE ONLY

e. Cost of evaluation survey *(Report in thousands)* → $

SPECIFIC INSTRUCTIONS – ITEMS 28f – 29b

28f. Indicate by marking the appropriate box(es), based upon the results of the completed Sewer System Evaluation Survey, what actions are necessary to correct infiltration/inflow conditions in order to meet the requirements of Section 201 and/or 211 of the Act. One or more than one corrective action may be chosen.

g. Record the estimated cost of the corrective action(s) identified in 28f, boxes 2 through 6.

h. Answer "Yes," **only** if the Sewer System Evaluation Survey indicates a need to increase the treatment capacity of the treatment plant to which these sewers discharge above the level of capacity provided for in item 17.

(1) Only if 28h is "Yes," record the additional treatment capacity in millions of gallons per day.

(2) Only if 28h is "Yes," record the cost of providing the additional capacity.

i. Answer "Yes," only if the Sewer System Evaluation Survey indicates that replacement or major rehabilitation of existing sewer collection system is necessary.

(1) If 28i is marked "Yes," indicate whether the State has determined that the proposed replacement or major rehabilitation is necessary to the total integrity and performance of the waste treatment works servicing the community. If the State has made such a determination please describe, in the space provided, the nature of the determination, its date and where the EPA Regional Office may obtain a copy.

(2) **Only** if the answers to both 28i and 28i(1) are "Yes," will there be a cost figure entered in 28i(2).

j. Summation of costs entered in cost blocks 28c, e, g, h(2), and i(2).

29a. Indicate the year in which construction of these Needs is expected to begin.

b. Indicate the year in which construction of these Needs is expected to be completed.

Authority and Facility No. ▶ _ _ _ _ _ _ _ _ _ _ _ _ _

Section V – CATEGORY III – ASSESSMENT OF NEEDS BY TYPE AND COST – Continued

CODES AND DEFINITIONS FOR BASIS OF COST ESTIMATES *(For use in items 28g, h(2), and i(2) below)*

1 – Actual contract costs
2 – Bid proposal from completed specifications
3 – Engineer consultant firm estimate
4 – Cost of previous comparable construction
5 – Engineer/consultant preliminary estimate
6 – EPA-supplied cost estimating procedures

ASSESSMENT OF NEEDS FOR CORRECTION OF INFILTRATION/INFLOW CONDITIONS – Continued

EPA USE ONLY

28f. Based upon the results of the completed sewer system evaluation survey, which of the following corrective actions are necessary to correct infiltration/inflow conditions in order to meet the requirements of Sections 201 and/or 211 of the Act?

0 ☐ Not known at this time } *SKIP to 28j*
1 ☐ None . . . . . }
2 ☐ Seal off sewer lines
3 ☐ Replace/reline sewer sections
4 ☐ Change/create flow routing system
5 ☐ Provide flow equalization
6 ☐ Other corrective actions – *Specify* ▶ _____

		Basis for cost estimate *From above*
g. Cost of required corrective actions identified in item 28f *(Report in thousands)* ▶	$	

EPA USE ONLY

h. Did the completed sewer system evaluation survey indicate that the capacity of the treatment plant to which these sewers discharge must increase **above** any increase in capacity already provided for in item 17?

1 ☐ Yes 2 ☐ No – *SKIP to item 28j*

(1) What additional treatment capacity above that specified in item 17 will be required? *(Report in millions)*	Gallons per day	
(2) What additional costs beyond those identified in item 22 will be required to provide this capacity? *(Report in thousands)* ▶	$	Basis of cost estimate *From above*

EPA USE ONLY

i. Did the completed sewer system evaluation survey indicate that replacement or major rehabilitation of an existing sewage collection system was necessary?

1 ☐ Yes 2 ☐ No – *SKIP to item 28j*

(1) Has the proposed replacement or major rehabilitation of this existing sewage collection been determined by the State to be necessary to the total integrity and performance of the waste treatment works servicing this community?

1 ☐ Yes – *Indicate determination and where a copy can be obtained* ▶
2 ☐ No – *SKIP to item 28j*

Date	Nature of determination
Location of copy	

		Basis of cost estimate *From above*
(2) Cost of replacement or major rehabilitation *(Report in thousands)* ▶	$	
j. **Subtotal** – Cost of Category III needs ▶	$	

ESTIMATED CONSTRUCTION DATES OF CATEGORY III NEEDS

29a. Construction is expected to begin *(Year)*	19 _ _
b. Construction is expected to be completed *(Year)*	19 _ _

GENERAL INSTRUCTIONS – ITEM 30

The Act provides for the construction of new collector sewers to correct violations of secondary treatment requirements caused by raw discharges, seepage to waters from septic tanks, cesspools, etc., and/or to comply with applicable court orders, permit stipulations, or administrative actions.

Section 211 of the Act provides that new collectors can be funded only in communities **existing prior to the enactment of the Act,** October 18, 1972, and then only if the community has sufficient existing or planned capacity to adequately treat the collected sewage. Sewage collection systems for new communities, new subdivisions, and newly developed urban areas, are not covered under the construction grant program. Provision for sewers for such areas are to be included as part of the development costs of the new construction. If you have any questions as to whether your area is considered to be a new community or not, contact your State agency. A collector sewer system means one or more sewers connected to the same interceptor.

SPECIFIC INSTRUCTIONS – ITEMS 30a – 30d

30a. Indicate "Yes," "No," or "Not known" by marking the appropriate box.

b. Mark "Yes," if the treatment plant now has existing or planned excess capacity adequate to treat any additional wastewaters to be transported to it by the proposed collectors.

c. Based on the explanation in the General Instructions above, indicate "Yes" or "No" by marking the appropriate box.

d. New collector sewers constitute a reportable need under this survey only if items 30a, b, and c were all marked "Yes." In this case, indicate by marking the appropriate box the primary reason for each new collector sewer. *(If more than five sewers are proposed, record the primary reason for each additional sewer in item 32.)*

If reasons 3 through 7 are marked for any proposed sewer, indicate in item 32, the type of order or permit, its date, the person or agency who authored the document, and the location where the EPA Regional Office can obtain a copy.

GENERAL INSTRUCTIONS – ITEM 31

The Act provides for the construction of new interceptor sewers to correct violations of secondary treatment requirements caused by raw discharges, seepage to waters from septic tanks, cesspools, etc. and/or to comply with applicable court orders, permit stipulations, or administrative actions.

The definition of existing community as described in the General Instructions in 28 above applies to this item also.

SPECIFIC INSTRUCTIONS – ITEMS 31a – 31d

31a. Mark "Yes," if there is a need for one or more interceptor sewers in the area now served (or expected to be served) by this treatment plant.

b. Mark "Yes," if the plant is required or will be required to treat untreated wastewaters now being collected by a facility under the jurisdiction of another authority.

c. Mark "Yes," if the treatment plant now has existing or planned excess capacity adequate to treat any additional wastewaters to be transported to it by the proposed interceptors.

d. Based on the definitions in the General Instructions above, indicate "Yes" or "No" by marking the appropriate box.

Authority and Facility No. ▶ _ _ _ _ _ _ _ _ _ _ _ _

Section VI – CATEGORY IV – ASSESSMENT OF NEEDS BY TYPE AND COST

ASSESSMENT OF NEEDS FOR NEW COLLECTOR SEWER SYSTEMS	*Mark (X) appropriate box(es) for each item*	EPA USE ONLY
30a. Is there a need for one or more new collector sewers in the area now served (or expected to be served) by this treatment plant?	1 ☐ Yes – *Continue with item 30b* 2 ☐ No . . . . . } *SKIP to item 31a* 3 ☐ Not known at this time }	
b. Does this treatment plant now have existing or planned excess capacity adequate to treat any additional wastewaters to be transported to it by the proposed collectors?	1 ☐ Yes – *Continue with item 30c* 2 ☐ No – *SKIP to item 31a*	
c. Do the wastewaters to be transported in the proposed collectors originate in communities existing prior of October 18, 1972?	1 ☐ Yes – *Continue with item 30d* 2 ☐ No – *SKIP to item 31a*	

d. What is the primary reason for each new collector sewer needed? *(If more than five, supply same data in item 32.)*

(Mark appropriate box(es) and explain lines 3–7 in item 32.)

	COLLECTOR SEWERS					EPA USE ONLY				
	Longest	2nd longest	3rd longest	4th longest	5th longest	1st	2nd	3rd	4th	5th
(1) Correct violation of secondary treatment requirement caused by raw discharges. . . .	1 ☐	1 ☐	1 ☐	1 ☐	1 ☐					
(2) Correct violation of secondary treatment requirement caused by seepage to waters from septic tanks, outhouses, etc.	2 ☐	2 ☐	2 ☐	2 ☐	2 ☐					
(3) Comply with order of health authority	3 ☐	3 ☐	3 ☐	3 ☐	3 ☐					
(4) Comply with State or Federal court order	4 ☐	4 ☐	4 ☐	4 ☐	4 ☐					
(5) Comply with State or Federal Permit or Enforcement Action	5 ☐	5 ☐	5 ☐	5 ☐	5 ☐					
(6) Required by EPA-approved plan.	6 ☐	6 ☐	6 ☐	6 ☐	6 ☐					
(7) Other – Specify _____	7 ☐	7 ☐	7 ☐	7 ☐	7 ☐					

ASSESSMENT OF NEEDS FOR NEW INTERCEPTOR SEWERS		EPA USE ONLY
31a. Is there a need for one or more new interceptor sewers in the area now served (or expected to be served) by this treatment plant?	1 ☐ Yes 2 ☐ No 3 ☐ Not known at this time	
b. Is this plant required (or will it be required) to treat presently untreated wastewaters now being collected by another authority?	1 ☐ Yes 2 ☐ No 3 ☐ Not known at this time	
c. Does this treatment plant now have existing or planned excess capacity adequate to treat any additional wastewaters to be transported to it by the proposed interceptors?	1 ☐ Yes – *Continue with item 31d* 2 ☐ No – *SKIP to item 33a and/or 35*	
d. Do the wastewaters to be transported in the proposed interceptors originate from a community existing prior to October 18, 1972?	1 ☐ Yes – *Continue with item 31e* 2 ☐ No – *SKIP to item 33a and/or 35*	

SPECIFIC INSTRUCTIONS – ITEM 31e – 32

31e. Indicate the basis of the need for each new interceptor sewer. More than one basis for each need may be chosen.

f. Only if items 31a or b, and c and d are "Yes," indicate by marking in the appropriate box, the primary reason for each new interceptor sewer.

If more than five interceptor sewers are proposed, record the primary reason for each additional sewer in item 32.

If reasons (2) through (4) are marked for any proposed interceptor sewer, indicate in item 32, the type of order or permit, its date, the person or agency who authorized the document, and the location where the EPA Regional Office can obtain a copy.

32. This item is to record any additional data which can not fit in the spaces provided for the individual questions. Be sure to indicate the item number and letter along with the additional data.

Authority and Facility No. ▶ __ __ — __ __ __ __ __ — __ __ __

Section VI – CATEGORY IV – ASSESSMENT OF NEEDS BY TYPE AND COST – Continued

ASSESSMENT OF NEEDS FOR NEW INTERCEPTOR SEWERS – Continued

Mark (X) appropriate box(es) for each item

EPA USE ONLY

31e. What is the basis for the need(s) for new interceptors?

		EPA USE ONLY
(1) To transport untreated wastes from existing collector(s) to treatment plant	1 ☐ Yes 2 ☐ No	
(2) To transport untreated wastes from new collectors to treatment plant	1 ☐ Yes 2 ☐ No	
(3) To transport wastes now being treated at another plant to this plant	1 ☐ Yes 2 ☐ No	

f. What is the primary reason for each new interceptor sewer needed? *(If more than five, supply same data in item 32.)*

(Mark appropriate box(es) and explain lines 2–4 in item 32.)

	INTERCEPTORS					EPA USE ONLY				
	Longest	2nd longest	3rd longest	4th longest	5th longest	1st	2nd	3rd	4th	5th
(1) Correct violations of secondary treatment requirements	1 ☐	1 ☐	1 ☐	1 ☐	1 ☐					
(2) Comply with court order, enforcement proceedings, etc.	2 ☐	2 ☐	2 ☐	2 ☐	2 ☐					
(3) Required by EPA-approved plan	3 ☐	3 ☐	3 ☐	3 ☐	3 ☐					
(4) Other – *Specify* ➘ _____	4 ☐	4 ☐	4 ☐	4 ☐	4 ☐					

ADDITIONAL DATA ON NEEDS

32. Enter item reference and explanation

Item reference	Explanation

GENERAL INSTRUCTIONS – ITEM 33

Only costs for new collector and/or interceptor sewers will be entered in this item. Costs for the rehabilitation of existing sewers should be reported under item 28. Costs for new sewers to separate combined sewers should be reported under items 35 and 36.

If items 30d and/or 31f were "Yes," select the particular item or items required and complete the corresponding line. Indicate the number required, the length in feet, the estimated cost, and the basis for the estimate.

SPECIFIC INSTRUCTIONS – ITEMS 33a – 34b

33a. thru d. Supply information requested.

e. Sub-total of costs entered in 33a through d.

34a. Indicate the year in which construction of these Needs is expected to begin.

b. Indicate the year in which construction of these Needs is expected to be completed.

Authority and Facility No. ▶ __ __ – __ __ __ __ __ – __ __ __

Section VI – CATEGORY IV – ASSESSMENT OF NEEDS BY TYPE AND COST – Continued

ADDITIONAL DATA ON NEEDS – Continued

32. Enter item reference and explanation – Continued

Item reference	Explanation

CODES AND DEFINITIONS FOR BASIS OF COST ESTIMATES
(For use in column 4 below)

1 – Actual contract costs
2 – Bid/proposal from completed specifications
3 – Engineer/consultant firm estimate
4 – Cost of previous comparable construction
5 – Engineer/consultant preliminary estimate
6 – EPA-supplied cost estimating procedures

Complete ONLY if items 30d and/or 31f were completed

COST OF NEEDS FOR NEW COLLECTOR AND/OR INTERCEPTOR SEWERS

(This category EXCLUDES rehabilitation of existing sewers, reportable under items 26 and 28, and new sewers needed to separate combined sewers reportable under items 35 and 36)	Number required (1)	Total feet required (2)	Total cost *Report in thousands* (3)	Basis of cost estimate *From above* (4)
33a. New collector sewers			$	
b. New interceptor sewers				
c. New force mains				
d. New pumping stations				
e. **Subtotal:** Cost of all Category IV needs ⟶			$	

ESTIMATED CONSTRUCTION DATES OF CATEGORY IV NEEDS

34a. Construction is expected to begin *(Year)*	19 __ __
b. Construction is expected to be completed *(Year)*	19 __ __

GENERAL INSTRUCTIONS – ITEM 35

The Act requires that periodic bypassing of untreated wastes from combined sanitary/storm sewers to an extent violating the secondary treatment and/or water quality standard effluent limitations of Section 301, as defined by EPA or an applicable State law, must be eliminated. Additionally, such correction may be specifically required by a court order, a permit stipulation or an administrative action binding on the facility.

This item includes questions on the existence of, and types of correction required for, such violations. Note that the costs of correcting any such conditions can be reported only if an evaluation has been made of the costs and benefits of the various alternative methods for correction, which demonstrates that the Needs reported herein are the most economical and/or efficient.

SPECIFIC INSTRUCTIONS – ITEMS 35a – 35f

35a. Self-explanatory.

b. In determining the frequency with which bypassing occurs, do not count more than one such occurrence within any one 24-hour period. However, if bypassing persists for a period of more than 24 hours, count one occurrence for each consecutive period of 24 hours or less.

c. If the correction of violations noted in 35b is specifically required by a water quality plan, indicate the title of the plan or a description thereof, its date, the person and/or agency who authored the document and the location where a copy can be obtained by the EPA Regional Office.

d. If the correction of violations noted in 35b is specifically required by a court order, permit stipulation or other type of administrative action, indicate the nature of the action, its date, and the location where a copy can be obtained by the EPA Regional Office.

e. If such a cost/benefit evaluation has been made, identify the name and/or nature of the evaluation, the person or agency who authored the document, its date, and the location where a copy can be obtained by the EPA Regional Office.

f. Answer "Yes," only if the modifications of existing facilities or construction of new facilities necessary to correct the violations noted in 35b have been determined to be cost effective in the evaluation cited in 35e.

Authority and Facility No. ▶ ___ ___ – ___ ___ ___ ___ – ___ ___ ___

Section VII – CATEGORY V – ASSESSEMENT OF NEEDS BY TYPE AND COST

ASSESSMENT OF NEEDS FOR CORRECTION OF COMBINED SEWERS

Mark (X) appropriate boxes

EPA USE ONLY

35a. Are any of the sewers which comprise or are connected to this facility combined sanitary storm sewers?

1 ☐ Yes – *Continue with item 35b*
2 ☐ No – *SKIP to item 38a*

b. With what frequency do such combined sewers require periodic bypassing of untreated wastewaters to an extent violating the secondary treatment and/or water quality standards effluent limitations of Section 301 of the Act?

1 ☐ Not known . . . . . }
2 ☐ Does not occur . . . } *Skip to item 38a*
3 ☐ Once a year or less }
4 ☐ More than once a year – *Specify average annual frequency* → Frequency

c. Is correction of the violations noted in 35b, specifically required by a water quality plan?

1 ☐ No
2 ☐ Yes; required by plan approved by State and EPA . . . . . }
3 ☐ Yes; required by plan approved by State . . . . . } *Identify plan* ↓
4 ☐ Yes; required by plan not yet approved by State . . . . . }

Title/description | Date

Author | Authority

Location of copy

d. Is correction of the violations noted in 35b specifically required by a State or Federal court order, permit or license, or other enforcement of regulatory action binding on this discharge?

1 ☐ No
2 ☐ Order of State court . . . . . }
3 ☐ Order of Federal court . . . . . }
4 ☐ State permit . . . . . }
5 ☐ Federal permit . . . . . } *Identify action* ↓
6 ☐ State enforcement proceeding . . }
7 ☐ Federal enforcement proceeding }
8 ☐ Other – *Specify* _____

Action

Complete unless response to both items 35c and 35d was "No," in which case, SKIP to item 38a

e. Has an evaluation been made of the costs and benefits of the various alternative methods for correction of the violations noted in 35b above which demonstrates that the needs reported herein are the most economical and/or efficient?

1 ☐ Yes – *Identify such analysis* ↓

Name/description

Authority | Date

Location of copy

2 ☐ No such evaluation has been made – *SKIP to item 38a*

f. Are modifications of existing facilities or construction of new facilities necessary to correct the conditions noted in 35b above, which have been determined to be cost-effective in the evaluation cited in 33e?

1 ☐ No – *SKIP to item 38*
2 ☐ Yes – *Continue with item 36a*

GENERAL INSTRUCTIONS – ITEM 36

Estimated costs should be reported only if the response to 35f is "**Yes.**" In that case, select the corrective action or actions required and complete the corresponding line(s). Indicate the number required, the length in feet or volume in million gallons, the estimated cost, the basis for the estimate, and the beginning and ending construction dates.

SPECIFIC INSTRUCTIONS – ITEMS 36a – 37b

36a. Indicate which type(s) of sewers are required, considering that the existing combined sewer may be retained for one type of use.

b. The retention basins or lagoons, reported here are those required to store wastes **prior** to treatment, thus preventing bypassing or overloading of the treatment plant. These must be distinguished from those lagoons reportable in box 3 of 22b(1), which are designed to hold the effluent after treatment.

c. Costs and supportive data to be entered in this block are **only** those required to correct combined sewer overflows, and even then, only if in **addition** to any treatment capacity data and costs already reported in items 17 and 22 respectively.

d. Includes costs of any equipment or construction intended to level off peak flows by routing excess waters in a different manner than ordinarily employed, **provided** the excess waters are returned for treatment when peak conditions subside.

e. Identify each type of corrective action not otherwise classifiable, and provide appropriate data.

f. Summation of all costs entered in blocks 36a, b, c, d, and e.

37a. Indicate the year in which construction of these Needs is expected to begin.

b. Indicate the year in which construction of these Needs is expected to be completed.

GENERAL INSTRUCTIONS – ITEM 38

This concluding summation of individual category costs will result in the total cost of all Needs for the facility. This total, in turn, is used to derive the total cost of all Needs identified by this Authority.

SPECIFIC INSTRUCTIONS – ITEMS 38a – 38f

38. Transfer costs of each category, if any, from the indicated cost blocks to item 38. Enter "0" or "––" if no costs are required for a particular category. Add numbers to determine the total cost of Needs for the facility.

Authority and Facility No. ▶ __ __ – __ __ __ __ – __ __ __

Section VII – CATEGORY V – ASSESSEMENT OF NEEDS BY TYPE AND COST – Continued

CODES AND DEFINITIONS FOR BASIS OF COST ESTIMATES *(For use in column 4 below)*

1 – Actual contract costs
2 – Bid/proposals from completed specifications
3 – Engineer/consultant firm estimate
4 – Cost of previous compariable construction
5 – Engineer/consultant preliminary estimate
6 – EPA-supplied cost estimating procedures

Complete appropriate items below ONLY if item 35f was marked "Yes." **COST OF NEEDS FOR CORRECTION OF COMBINED SEWER OVERFLOWS**	Number required (1)	Length *(Feet)* or volume *(Mil., gal.)* (2)	Total cost *Report in thousands* (3)	Basis of cost estimate *From above* (4)
36a. Construction of new sewers to separate existing combined sewers				
(1) New collectors			$	
(2) New interceptors				
(3) New storm sewers				
b. Construct storage/retention basins or lagoon				
c. Increase treatment capacity				
d. Provide flow routing or diversion chambers				
e. Other – *Specify*				
f. **Subtotal** – Cost of all Category V needs ⟶			$	

ESTIMATED CONSTRUCTION DATES OF CATEGORY V NEEDS

37a. Construction is expected to begin *(Year)*	19__ __
b. Construction is expected to be completed *(Year)*	19__ __

Section VIII – SUMMARY OF COSTS OF CATEGORY NEEDS

	Total costs
38a. Category I *(from item 22g on page 17)*	$
b. Category II *(from item 26g on page 21)*	
c. Category III *(from item 28j on page 23)*	
d. Category IV *(from item 33e on page 29)*	
e. Category V *(from item 36f above)*	
f. **GRAND TOTAL** (All categories) ⬛	$

Remarks